PERMIT NO. AGP - **14-005P**
Effective Date: **3/5/2014**
Expiration Date: **3/5/2015**
Mail Out Date: **3/5/2014**

STATE OF HAWAII
DEPARTMENT OF HEALTH

AGRICULTURAL BURNING PERMIT

IS HEREBY ISSUED TO

HAWAIIAN COMMERCIAL & SUGAR COMPANY

(NAME)

SUGARCANE FIELDS AS INDICATED ON CURRENT MAP, MAUI

(BURN LOCATION)

Subject to Hawaii Revised Statutes (HRS), Chapter 342B; Hawaii Administrative Rules (HAR), Chapter 11-60.1; and all the following conditions unless modified or replaced by any attached special conditions:

1. Permittee shall notify the Maui Police Central Dispatch at (808) 244-6400 and the fire station nearest to your burn location at least one hour prior to each burn.
2. **BURNING IS NOT allowed during a "no-burn" period** declared by the Department of Health (DOH) under §11-60.1-55, HAR.
3. Permittee shall provide an adequate water source to the burn location which will prevent the fire from spreading to areas adjacent to burn location.
4. An inspection shall be conducted on all accessible areas of each field prior to burning. Any batteries, abandoned vehicles, wastes handled or processed by sugar factory operations, tires, petroleum wastes, appliances, furniture, logs greater than 4" in diameter, hazardous wastes, 55 gallon drums and other similar items which may have been deposited in the burn area and identified by the inspection shall be removed prior to any burn. Burning of agricultural wastes that are not generated from the burn location is prohibited. In the pre-burn checklist document that the inspection was conducted prior to burning of the field.
5. Fire shall be attended or supervised by an adult in accordance with Exhibit 1 (HC&S Burn Procedures) which is attached hereto and incorporated herein.
6. The following fields, as indicated in the 2014 Harvesting Schedule and map submitted by the permittee, shall be burned in accordance with Exhibit 1 (HC&S Burn Procedures): 100, 101, 102, 103, 104, 106, 107, 108, 110, 111, 112, 115, 119, 120, 200, 201, 203, 205, 206, 207, 213, 301, 303, 304, 305, 308, 310, 311, 312, 313, 314, 400, 401, 405, 407, 408, 412, 415, 417, 501, 502, 503, 504, 507, 508, 509, 510, 600, 601, 603, 604, 605, 606, 607, 608, 610, 703, 704, 707, 708, 709, 710, 711, 712, 714, 716, 717, 719, 751, 753, 767, 800, 801, 802, 805, 806, 807, 809, 810, 811, 812, 814, 816, 817, 818, 822, 823, 900, 901, 902, 903, 904, 907, 908, 909, 910, 911, 913, 916, 917, 919, 921, and 922; which are attached hereto and incorporated herein.
7. The following fields, which are nearest to roadways and Kahului airport, as indicated in the 2014 Harvesting Schedule and map submitted by the permittee, shall be burned in accordance with Exhibit 2: 104, 107, 108, 111, 200, 207, 301, 303, 304, 308, 401, 405, 407, 501, 502, 507, 508, 509, 600, 601, 603, 604, 605, 606, 607, 608, 610, 707, 708, 709, 710, 711, 712, 714, 716, 717, 719, 751, 753, 767, 800, 900, 901, 902, 908, 911, 913, 916, 917, and 919; which are attached hereto and incorporated herein.
8. The following fields, as indicated in the 2014 Harvesting Schedule and map submitted by the permittee, shall be burned in accordance with Exhibit 3: 100, 101, 102, 103, 106, 110, 112, 115, 119, 120, 201, 203, 205, 206, 213, 305, 310, 311, 312, 313, 314, 400, 408, 412, 415, 417, 503, 504, 510, 703, 704, 801, 802, 805, 806, 807, 809, 810, 811, 812, 814, 816, 817, 818, 822, 823, 903, 904, 907, 909, 910, 921, and 922; which are attached hereto and incorporated herein.
9. The following fields, as indicated in the 2014 Harvesting Schedule and map submitted by the permittee, shall be burned in accordance with the schedule below: Peak traffic hours are 7:00 a.m. - 8:30 a.m. and 3:30 p.m. - 5:00 p.m. All flames must be extinguished by the end of the burn period.

   a. The following fields shall be burned between the hours of 3:00 a.m. and 6:00 a.m.: 601, 604, 605, 607, 608, 610, 709, 710, 711, 712, and 714.

b. The following field shall be burned in the summer months (June, and July) between the hours of 4:00 a.m. and 6:00 p.m., excluding peak traffic hours and in all the other months between 4:00 a.m. and 6:00 a.m.: 200.

c. The following fields shall be burned between the hours of 4:00 a.m. and 6:00 p.m.: 909, and 910.

d. The following fields shall be burned between the hours of 4:00 a.m. and 6:00 p.m., excluding peak traffic hours: 104, 107, 108, 301, 303, 304, 308, 400, 401, 405, 407, 501, 502, 507, 508, 509, 600, 603, 606, 707, 708, 716, 717, 719, 751, 753, 767, 800, 900, 901, 902, 908, 911, 913, 916, 917, and 919.

e. The following field shall be burned between the hours of 6:00 a.m. and 6:00 p.m., excluding peak traffic hours, except during Makawao Union Church services or Sundays: 111.

f. The following field shall be burned in the summer months (June through September) between the hours of 6:00 a.m. and 6:00 p.m.: 103, 106, and 207.

g. All other fields, as indicated in the 2014 Harvesting Schedule, map submitted by the permittee, or listed in condition #6, shall be burned between 6:00 a.m. and 6:00 p.m.

10. Only controllable amounts shall be burned and under conditions that will minimize visible ground level smoke from entering any residence, business, or public area. With the exception of smoke impacts to roadways and/or the Kahului airport resulting from the burning of fields listed under Condition 7 in accordance with Exhibit 2, if a burn has begun and visible ground level smoke enters any residence, business, or public area, permittee shall not burn additional fields that day which would affect such impacted areas until meteorological conditions improve. If a decision is made to conduct additional burning under this provision, permittee shall notify DOH by telephone prior to the day's next burn and shall document the justification for conducting additional burns on a Burn Justification Log. This documentation shall include the location of the original burn and of residences, businesses, or public areas that were impacted by visible ground level smoke, the planned location of any subsequent burns that day, a description of any problems encountered during the original burn which may have contributed to visible ground level smoke in a residence, business, or public area and any corrective actions implemented to address them, any changes in meteorological or field conditions since the initial burn, and identification of downwind areas most likely to be impacted by the next burn.

11. Visible ground level smoke entering any residence, business, or public areas, with the exception of smoke impacts to roadways and/or the Kahului airport resulting from the burning of fields listed under Condition 7 in accordance with Exhibit 2, or smoke impacts from fires not caused by the permittee (e.g., malicious fires, brush fires), shall not exceed a Public Impact Code of 3, as described in Exhibit 1. After completion of the burn, smoldering piles shall be promptly addressed in compliance with Exhibit 1.

12. Permittee shall submit a written report to DOH within five (5) working days after any deviation from the permit requirements, including the procedures specified in Exhibits 1, 2 and 3 and accompanying attachments. The report shall identify the probable cause of the deviation and any corrective actions or preventive measures taken.

13. Permittee shall monitor all burns and maintain a record of the meteorological conditions and plume behavior throughout each burn. To the extent practical, photos shall be taken of the plume behavior. A copy of each Pre-Burn Checklist, Exhibit 2/Exhibit 3 Checklist, Burn Monitor Log and the Daily Weather and Dispersion Forecast shall be submitted to the DOH, either in hard copy or electronically, within seven (7) days after Friday of each week or upon request.

14. All records, including support information, shall be true, accurate, and maintained in a permanent form suitable for inspection, retained for a minimum of three (3) years following the date of such records, and made available to the DOH or its representatives upon request.

15. Permittee shall keep a copy of this permit at the burn site during the burn and shall make it available for inspection upon request.

16. For the purpose of determining compliance with this permit, the DOH or its duly authorized representatives shall be granted access to the property at reasonable times, pursuant to HRS, §342B-41, Inspection of Premises. The DOH shall not be denied access to burn sites.

The DOH reserves the right to terminate, suspend, reopen, or amend this permit, subject to HAR §11-60.1-57 (e). Violation of any condition of this permit, any section of Chapter 342b, HRS, or any section of Chapter 11-60.1 HAR, may result in fines no greater than $10,000.00 for each day of each violation, pursuant to §342b-47(b), HRS. In addition, a violation may be reason for amendment, suspension, or revocation of this permit.

BY: _____
MANAGER, CLEAN AIR BRANCH

Hawaiian Commercial & Sugar Company
2014 Agricultural Burning Permit - Exhibit 1

This exhibit describes general procedures to be followed for pre-harvest burning of sugarcane in order to minimize public exposure to visible smoke impacts. Included are procedures to be followed prior to, during, and after each burn. The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that all fields are burned in accordance with these procedures.

Additional requirements are specified for individual fields in Exhibits 2 and 3 and these requirements shall also be followed.

A. Actions to be taken prior to burning:

(1) Assessment of field location and actions for sensitive downwind areas - Prior to burning any field, the Harvesting Manager shall review the location of the field with respect to certain sensitive areas to determine the types of public notifications necessary and any restrictions on when the field can be burned.

(a) Public Notification Procedures
Public notifications specified for each burn are listed in the attached Cane Burn Notification listing (Attachment 1a) and are described below.

- Written Notices: For those fields for which written notices are specified in Attachment 1a, attempts will be made to deliver flyers to residential premises, schools, churches, and other facilities. By law mailboxes cannot be used for this purpose, and some residences may not be accessible (e.g., due to dogs, locked gates, etc.) or may have no other provisions for receiving written notices; therefore, reasonable efforts will be made to leave written notices where they are likely to be seen by occupants of the premises. Where multiple dwellings may be present on a single residential property, the notification attempt will be made to the dwelling most readily accessible from the street. Where a particular residential area is specified in the "Written Notice" column of Attachment 1a, HC&S shall make reasonable efforts to ensure that all residential premises in the specified area receive written burn notifications. Where the words "Adjacent Residents" appear in the "Written Notice" column, HC&S shall make reasonable efforts to deliver notices only to those homes immediately adjacent to the field. A sample flyer is included as Attachment 1b.
- Telephone Notifications: Telephone notifications will be attempted at least two hours prior to scheduled burns for those individuals who have specifically requested such notifications. A call list is maintained for these individuals and is updated as new requests are received. Reasonable attempts at phone notifications will be made; notifications may be precluded when no one answers the phone, there is no answering machine or voice mail, the number is out of service, or in similar circumstances.
- Road Signs and Guards: For fields adjacent to roads and highways, signs and/or traffic guards shall be posted as indicated in the Cane Burn Notification listing to alert approaching motorists.

- Police and Fire: The Maui Police Department Central Dispatch and the nearest fire station shall be notified prior to each burn as specified in the Agricultural Burning Permit. Notifications shall be made at least one hour prior to burning. The time of notification shall be recorded on the Pre-Burn Checklist (Attachment 1d).

(b) Restrictions on Burning - Schools

Fields which are upwind of abutting schools shall not be burned while school is in session. Burns will be scheduled so that they are completed at least one hour prior to the start of school or else will be conducted after school hours. The Harvesting Manager shall maintain and make available to the Department of Health a list of all known schools located adjacent to HC&S fields (Attachment 1c) and their normal hours of operation, including any summer school and after school programs. If necessary, permission will be requested from the Department of Health to burn such adjacent fields after 1800 in order to prevent any smoke impacts. To the extent feasible, the Harvesting Manager shall directly coordinate efforts with administrators of abutting schools to further reduce the potential for burns in immediately adjacent fields to impact the school.

Prior to burning a field which, based on previous experience, has an elevated potential to result in visible smoke impacts at a nearby school, the Harvesting Manager shall ensure that the assessment of meteorological conditions includes a review of wind data from the previous day to determine whether variable/shifting winds are likely at the expected burn time.

Prior to burning a field located directly upwind of and within 2,000 feet of a school while school is in session, the following additional precautions shall be observed:

i. Burning shall be avoided under conditions when the Air Quality Index (as applicable per Section A.(9)) is outside of the GOOD range (this condition shall not apply when the AQI is unavailable from the AirNOW website);
ii. Burning shall be delayed when predicted conditions for BOTH dispersion and plume rise are less than optimal (i.e., when dispersion is predicted to be no better than "fair" AND a "weak" inversion is predicted for the scheduled time of the burn). Under such conditions, burning shall be delayed until after the predicted inversion has broken.

As specified in paragraph A.1.(a) above, notification to the person responsible for these facilities will be attempted two days prior to scheduled burns.

(c) Restrictions on Burning – Churches

Fields upwind of adjacent churches shall not be burned during scheduled services. As specified in paragraph A.1.(a) above, notification to the person responsible for these facilities will be attempted two days prior to scheduled burns.

(d) Restrictions on Burning - Public Roadways
The following public roadways may be impacted by smoke during burning and are considered potentially hazardous roadways:

Hana Highway
Haleakala Highway
Mokulele Highway/Puunene Avenue
Pulehu Road
North Kihei Road
Haliimaile Road
Baldwin Avenue
Kuihelani Highway/Dairy Road
Honoapiilani Highway

Fields adjacent to these roadways shall not be burned during peak traffic periods (0700-0830 and 1530-1700) unless otherwise authorized in the permit. In order to minimize traffic impacts and potentially hazardous conditions, HC&S will request approval from the Department of Health to burn most fields adjacent to these roadways between the hours of 0400 to 0600. As noted above, signs will be posted and/or roadways may be manned by traffic control guards (private security or off-duty police officers) for these fields. The Police Department shall be notified prior to burns that may impact traffic on roads and highways.

(e) Restrictions on Burning - Public Recreation Areas
There shall be no burning of fields directly upwind from adjacent public recreation areas on Sundays. For the purposes of this exhibit, "adjacent" means adjoining the field being burned. To the extent practicable when reasonable advance notification has been provided, efforts shall be made to adjust the harvesting schedule in order to further reduce the potential for smoke to impact planned and organized public activities (e.g., fairs, carnivals, charity walks, athletic events, etc.) in downwind areas adjacent to fields scheduled for burning.

(f) Restrictions on Burning - Airport
In order to minimize impacts on airport operations, HC&S will request approval from the Department of Health to burn fields adjacent to the airport or located in the airport approach path between the hours of 0300 to 0600. The airport control tower shall be notified by telephone prior to burns in the vicinity of the airport as noted in the Cane Burn Notification listing.

(g) Exhibit 2 and Exhibit 3 Burn Conditions
All burns shall be conducted in accordance with the conditions and limitations specified in Exhibit 2 or Exhibit 3, as applicable.

(2) "No Burn" declarations - Upon issuing a "no burn" declaration, the Department of Health representative will notify the HC&S Harvesting Manager via cellular telephone. Prior to burning, the Harvesting Supervisor in charge of the burn shall contact the Harvesting

Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) to determine whether the Department of Health has declared a "no burn" period. Burning shall not be conducted during any "no burn" period declared by the Department of Health.

(3) Red Flag Warnings - A Red Flag Warning is an advisory from the National Weather Service intended to inform fire fighting and land management agencies when weather conditions may pose an increased risk of wildfire ignition and propagation. A Red Flag Warning is advisory in nature, not regulatory. However, local fire agencies may, *at their discretion*, impose a ban on outdoor burning when warranted by local conditions. Upon receipt of any notice from the Maui Fire Department (MFD) that a ban on outdoor burning is in effect on Maui, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that burning does not occur in the areas covered by the ban until MFD advises that the ban has been lifted.

(4) Assessment of meteorological conditions - Prior to burning, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall review available meteorological data, including wind speed and direction, to determine likely smoke plume behavior and whether conditions are suitable for burning. Burning shall only be conducted under conditions that will minimize ground level visible smoke from entering residences, businesses, or other areas to which the public has unrestricted access. The following sources of data shall be considered:

- Western Weather Group (WWG) smoke management weather and dispersion forecast (obtained daily through computer link)
- Existing weather conditions from HC&S weather stations, especially those nearest to the burn location
- Wind data from field measurements at the burn site
- Rainfall data from the area of the field to be burned
- Records and experience from past burns indicating historical weather data and corresponding smoke plume behavior
- National Weather Service forecast

Burning shall not be conducted unless a complete WWG smoke management weather and dispersion forecast has been provided for the field to be burned.

(5) Assessment of predicted dispersion in area of field being burned – The WWG daily weather and dispersion forecast shall include predicted conditions for smoke dispersion at the scheduled burn time and for later in the day in the area of each field planned to be burned on that day. When smoke dispersion for a particular field is predicted to be "poor" at the scheduled burn time, that field shall not be burned on the day covered by the forecast except that burning may be considered later in the day if the forecast predicts that dispersion for that field will improve to "fair" or better. Dispersion conditions predicted for a particular field shall only affect burn decisions made for that field, and will not necessarily preclude burning in other fields.

(6) Assessment of temperature inversions - The WWG daily weather and dispersion forecast shall include the predicted likelihood of a morning temperature inversion in the area of each field planned to be burned on that day. When a "moderate" or "strong" morning inversion is predicted in the area of a particular field, that field shall not be burned until after the inversion is predicted to break (typically around mid-morning). When a "weak" morning inversion is predicted in the area of the field to be burned, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall evaluate all relevant information on the forecast (including the morning inversion prediction, the cautionary notes, and the plantation stability) to determine whether the predicted inversion is likely to adversely impact smoke dispersion. Inversion conditions predicted for a particular field shall only affect burn decisions made for that field, and will not necessarily preclude burning in other fields elsewhere on the plantation.

(7) Assessment of rainfall - The WWG daily weather and dispersion forecast shall include information regarding rainfall measured within the previous 24 hours at the weather station nearest to each field scheduled to be burned. Additionally, manual rain gages may be sited in or near fields scheduled to be burned. When rainfall over the previous 24 hours recorded in or nearest to a field is 0.1 inches or more, that field shall not be burned until the vegetative mat in the field has been checked for moisture to confirm that the field is dry enough to burn.

(8) Assessment of vog – The WWG daily weather and dispersion forecast shall include predictions for vog to impact air quality on Maui based on data from the University of Hawaii Vog Measurement and Prediction Project (VMAPP) website. When the VMAPP tables of model predicted values indicate that sulfur dioxide and/or sulfate aerosol concentrations in Kihei will result in "moderate" (indicated by a rating of "yellow" on the WWG forecast) or "unhealthy" (indicated by a rating of "red" on the WWG forecast) air quality on the day covered by the forecast, burning shall not be conducted. A rating of "green" on the WWG forecast indicates that air quality is predicted to remain in the "good" range despite any potential vog impacts, and burning in compliance with other applicable permit requirements is therefore permissible. If the VMAPP website is not functioning or the table of model predicted values is not posted, has not been updated, or is clearly erroneous at the time that the WWG daily forecast is prepared, then the forecaster shall indicate "NA" (not available) for vog data. In that event, this assessment of vog shall not be required for that day's burns.

The VMAPP website is maintained by the University of Hawaii and HC&S has no control over the continued availability of data on this site. In the event that maintenance of the VMAPP website is discontinued, or the information available on the VMAPP website is significantly changed or the format modified such that compliance with this provision is not feasible, then compliance with this provision of Exhibit 1 shall no longer be required as part of the pre-burn assessment. HC&S shall retain the flexibility to evaluate whether a

new or modified vog forecasting tool is sufficiently reliable and suitable for incorporation into its pre-burn assessment procedures.

(9) Assessment of existing air quality – Within one hour prior to each burn, the Harvesting Manager (or his designee) shall check the current Air Quality Index (AQI) for the Department of Health's Kihei and Paia air monitoring stations posted on U.S. EPA's AIRNow website (http://airnow.gov ; under "Local Air Quality Conditions and Forecasts" in the top right corner of the page select "Hawaii" from the state scroll down menu and read "Current AQI" for Kihei or Paia).

(a) Rules for assessment of AQI when burning fields located on the Kihei (south) side of Kailua Gulch – Due to distance and prevailing winds, fields located on the Kihei side (i.e., to the south) of Kailua Gulch are unlikely to impact public areas in an around Paia Town. The following limitations on burning shall be adhered to for all burns in fields located on the Kihei side of Kailua Gulch.

- If the AQI at the Kihei air monitoring station is in the "good" range (indicating air quality meets state and federal standards), burning may be conducted as normal in compliance with all other applicable permit requirements.
- If the AQI at the Kihei air monitoring station is within the "moderate" range (indicating air quality meets state and federal standards), then additional caution shall be exercised to avoid burning under marginal conditions which could result in further degradation of the AQI (i.e., into the "unhealthy" range). The Harvesting Manager shall evaluate whether predicted conditions for dispersion and other meteorological conditions warrant calling a voluntary "no burn". Burning when the AQI is in the "moderate" range shall be conducted in compliance with all other applicable permit requirements.
- If the AQI at the Kihei air monitoring station falls within any "unhealthy" range, no burning shall be conducted until air quality improves and the AQI is again within the "good" or "moderate" range.
- If the AIRNow website is not functioning, or the current AQI for the Kihei station is not posted or is clearly erroneous at the time that the website is checked, then no assessment of the AQI shall be required in order for the burn to proceed.

(b) Rules for assessment of AQI when burning fields located on the Paia (north) side of Kailua Gulch – Fields located on the Paia side (i.e., to the north) of Kailua Gulch are more likely to impact public areas in an around Paia Town. The following limitations on burning shall be adhered to for all burns in fields located on the Paia side of Kailua Gulch.

- If the AQI at BOTH the Kihei and Paia air monitoring stations is in the "good" range (indicating air quality meets state and federal standards), burning may be conducted as normal in compliance with all other applicable permit requirements.
- If the AQI at EITHER the Kihei or Paia air monitoring station is within the "moderate" range (indicating air quality meets state and federal standards) and the AQI at the other station is in either the "good" or "moderate" range, then additional caution shall be exercised to avoid burning under marginal conditions which could

result in further degradation of the AQI (i.e., into the "unhealthy" range). The Harvesting Manager shall evaluate whether predicted conditions for dispersion and other meteorological conditions warrant calling a voluntary "no burn". Burning when the AQI is in the "moderate" range shall be conducted in compliance with all other applicable permit requirements.

- If the AQI at EITHER the Kihei or Paia air monitoring station falls within any "unhealthy" range, no burning shall be conducted until air quality improves and the AQI at both stations is again within the "good" or "moderate" range.
- If the AIRNow website is not functioning, the current AQI for neither the Kihei station nor the Paia station is posted, or the AQI for both stations is clearly erroneous at the time that the website is checked, then no assessment of the AQI shall be required in order for the burn to proceed. If the AQI for only one of the two stations is posted and is not clearly erroneous, then burn decisions shall be made as described above based upon the AQI from the properly functioning station.

When the AQI has been checked on the AIRNow website, the time that the website was checked shall be recorded on the Pre-Burn Checklist (Attachment 1d). In addition, to document the AQI observed just prior to the burn, the person checking the website shall save and print a "screen shot" of the web page for both the Kihei and Paia stations at the time the AQI was checked. The printed "screen shots" shall be retained as part of the burn records required under Section D of this Exhibit 1. Both "screen shots" should be taken regardless of the burn location and even if the web page indicates "No Data Available".

(Note: The AQI updates approximately hourly using data from the Department of Health's air quality monitoring stations. In some cases, more than one hour may elapse between updates. For this reason, it is possible that the "Last Update" time that appears on the web page "screen shot" may be more than one hour prior to the burn time even when the site was checked within one hour of the burn time. For this reason, the time that the AQI was checked must also be recorded on the Pre-Burn Checklist.)

The AIRNow website and the Kihei and Paia air quality monitoring stations are maintained by government agencies and HC&S has no control over the continued availability of the data they provide. In the event that operation of the AIRNow website or the Kihei or Paia air quality monitoring station is discontinued, or the information available from these sources is significantly changed or the format modified such that compliance with this provision is not feasible, then compliance with this provision of Exhibit 1 shall no longer be required as part of the pre-burn assessment. HC&S shall retain the flexibility to evaluate whether a new or modified air quality forecasting tool is sufficiently reliable and suitable for incorporation into its pre-burn assessment procedures.

(10) Inspection and removal of unauthorized materials - An inspection shall be conducted of all accessible areas of each field prior to burning. Any batteries, abandoned vehicles, factory wastes, tires, petroleum products, appliances, furniture, hazardous wastes, 55-gallon drums, or other similar items which may have been deposited in the burn area and which are identified during the inspection shall be removed from the burn area prior to any burn. Any

logs greater than four inches in diameter which may have been deposited in the burn area and which are identified during the inspection, with the exception of those from any plants found growing in the field, shall be removed from the burn area prior to any burn. Inspections will normally be conducted during cutting of firebreaks within one day of the scheduled burn.

(11) Protection of irrigation system infrastructure - Drip irrigation systems are installed in each field, consisting of buried PVC irrigation mainlines and above-ground irrigation system risers in valve lines located along field edges, subsurface polyethylene drip tubing used to apply water to the crop, and polyethylene oval hose used to supply water from the risers to the drip tubing at the field edges. Permanently installed PVC piping is expensive and time-consuming to replace, so extensive efforts are made to protect these irrigation system components from damage during harvesting. Prior to each burn, action shall be taken as follows to minimize the potential for accidental damage or burning of irrigation infrastructure:

- Except at field edges where it connects to the remainder of the irrigation system, the majority of drip irrigation tubing is buried during installation and is thereby protected from burning.
- Once irrigation of the field has been halted in preparation for harvest, oval tubing located at the field edges shall be disconnected and pulled from the field prior to the field being burned.
- During preparation for burning, sugarcane at the field edges shall be pushed into the fields, away from the irrigation riser line, to create a "fire line" in order to prevent damage to or destruction of the irrigation risers when the field is burned. "Fire line" cane may also be hauled out of the field rather than pushed into the field, or the field edge may be "notched" (i.e., cane pushed or hauled out only in the area around each riser) to protect the irrigation risers. Alternate means of protecting the risers may be developed and employed, provided that they are equally effective at preventing the risers from burning.

B. Actions to be taken during the burn:

(1) Monitoring and recordkeeping – The Harvesting Manager shall designate an individual to monitor each burn and document meteorological conditions and plume behavior, including any visible smoke impacts on public areas. The Burn Monitor shall continue to monitor the burn and record observations for a minimum of one hour from the start of the burn and until all visible smoke has passed overhead beyond public areas or out to sea and any ground level visible smoke impacts to public areas have dissipated. If necessary, the Burn Monitor shall follow the smoke plume to determine the extent of any ground level visible smoke impacts in public areas. In addition to recording observations of the burn, the Burn Monitor shall take a photograph during each observation, when practicable (for example, photos shall not be required when precluded by darkness).

(a) Burn Monitor Log - The Burn Monitor shall record the following information on the Burn Monitor Log (Attachment 1e) for each burn:

- The number of the field to be burned and the number of acres burned
- The date and time the burn was started and the wind speed and direction at the burn site at the start of the burn
- The smoke pattern exhibited by the plume throughout the burn; a listing of smoke pattern codes is included as Attachment 1f
- Any significant shifts in wind speed and direction which occur during the burn
- A description of any observed visible smoke impacts in public areas, including a Public Impact Code from "0" (no evidence of smoke in the area) to "7" (very heavy smoke); a listing of smoke pattern codes is included as Attachment 1f
- The date and time the burn was completed (i.e., date and time when all flames have been extinguished)
- The time that the photograph of each observation was taken (all photographs shall be appended to the Burn Monitor Log).

(b) Maui Vortex - The WWG forecast includes a prediction of whether formation of a characteristic circulating wind pattern near the southern edge of the plantation, called the "Maui vortex", is likely to occur. The Maui vortex can impact downwind dispersion of smoke from the burn. When formation of the Maui vortex is predicted and meteorological conditions during the burn include slow or stagnant winds, reasonable efforts shall be made to monitor wind conditions in the vicinity of the vortex after completion of the burn for indications of vortex formation. Monitoring of wind conditions shall include observing wind data from the Kihei, Field 415, and Kula Ag Park stations. The Burn Monitor shall resume monitoring for ground level smoke impacts if such impacts are anticipated to result from vortex formation.

(c) Special Burn Monitoring – At its sole discretion, HC&S may choose to conduct special burn monitoring beyond what is specifically required by this Exhibit, using additional personnel besides the designated Burn Monitor, in order to better document conditions during and after the burn. Such monitoring will typically be conducted during burns upwind of especially sensitive areas or to attempt to substantiate complaints from a particular area. When conducted, such special monitoring may be recorded at the end of the Burn Monitor Log for the subject burn. Documentation of special burn monitoring should include the location(s) of the special monitor(s), the period of time during which the monitor was at each location, a description of any smoke impacts observed by the monitor(s), and other relevant information.

(2) Suspension of burns due to smoke impacts - In the event that any ground level visible smoke is observed entering any residence, business, or public area (conditions corresponding to a public impact code of "2" or greater) during or after a burn, the Burn Monitor shall immediately notify the Harvesting Manager or the Harvesting Supervisor in charge of the burn. The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that no additional burns are conducted that day which would impact the affected area until meteorological conditions improve. (Note: This requirement shall not

apply to fields burned in accordance with Exhibit 2 where ground level smoke impacts are limited to public roads or the airport.)

(3) Resumption of burning after visible smoke impacts – When visible smoke impacts to public areas warrant that no additional burns should be conducted which would impact the affected area until meteorological conditions improve (per Section B.(2) above), additional burns may be conducted on the same day only after ALL of the following conditions have been met:

(a) Smoke impacts to public areas from the earlier burn (other than smoke impacts to public roads and/or the airport from burning an Exhibit 2 field) did not exceed a Public Impact Code of three (3).

(b) The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) has determined that conditions under which any subsequent burns would be conducted are unlikely to result in visible smoke impacts to the same public area(s) affected by the earlier burn. (Note: This requirement shall not apply to smoke impacts to public roads and/or the airport from burning an Exhibit 2 field.)

(c) The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) has documented the determination required under Section B.(3)(b) above on a Burn Justification Log (Attachment 1g). Documentation shall include:

- The time and location of the original burn;
- Identification of any public areas that were impacted by ground level visible smoke as a result of the burn and a description of the smoke impacts (e.g., duration, Public Impact Code);
- The planned location of any subsequent burns to be conducted on the same day;
- A description of any problems encountered during the initial burn which may have contributed to ground level smoke in public areas;
- Corrective actions or preventative measures implemented to address problems identified during the initial burn;
- Any changes in meteorological or field conditions since the initial burn that are expected to improve smoke dispersion; and
- Identification of downwind areas most likely to be impacted by the next burn.

(d) The Harvesting Manager or Harvesting Supervisor in charge of the burn has notified the Department of Health by telephone of the intent to conduct additional burns.

(4) Attendance to fires and conduct of burns - The date, time, and acreage to be burned shall be determined by the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work). The Harvesting Supervisor at the burn site shall be responsible for controlling the burn and shall assign men and equipment to the burn as necessary depending upon wind

conditions, field location, dryness of the surrounding area, and proximity to public areas. A supervisor shall remain at the burn site until all flames are extinguished and smoke emissions are minimized.

(a) Controlling fires - Fire breaks are used to isolate the specific area of cane to be harvested and are cleared prior to burning. The size and location of firebreaks will be determined by the Harvesting Supervisor depending upon field location and wind conditions. Under normal conditions, a 15-foot wide firebreak will be cleared; however, a firebreak up to 50 feet wide may be cleared to avoid a "jump fire" into standing cane, rangeland, or nearby structures. In fields immediately adjacent to residences, firebreaks shall be adequate to protect adjacent property and the area surrounding the acreage to be burned shall be watered down prior to burning. In the event that the field is too close to residences or other structures to be safely burned, a portion of the field shall be harvested unburned.

When burning adjacent to seed fields, the Harvesting Supervisor at the burn site shall ensure that downwind seed fields are monitored to ensure timely detection and response in the event of a jump fire. Additionally, to the extent feasible without hampering equipment access, increased wetting of adjacent seed fields shall be conducted prior to burning upwind fields.

The Harvesting Supervisor at the burn site shall determine the speed and direction of burning by controlling firing of the field, utilizing backfire techniques, and remaining alert to changes in wind conditions. Water trucks and firebreak equipment shall be maintained at the burn site during the burn to help prevent uncontrolled fires.

(b) Contingency Plans - Training in dealing with contingencies shall be a part of the Harvesting Department's continuing training program. In the event of a "jump fire" or other unforeseen accident, the following steps shall be taken:

- Notify the Fire Department and Police Department
- Dispatch additional water trucks and rakes to the burn site
- Notify all harvesting crews to assist in dealing with the emergency
- Complete additional notifications and actions required under the plantation fire protection manual as necessary.

(c) Variable Winds - Burning in the Pulehu area can be hazardous due to highly variable wind conditions during the day and the proximity to frequently dry rangelands. HC&S may request approval from the Department of Health to burn certain fields in this area during early morning hours (0400 to 0600) to take advantage of more consistent downslope drainage winds. However, such early morning burns shall only be conducted under meteorological conditions that will also minimize smoke impacts on public areas. If such conditions cannot be met during early morning hours, then normal daytime burns in these areas will be required.

(d) Minimizing Smoke Impacts - Only controllable amounts shall be burned and under conditions that will minimize ground level visible smoke from entering any nearby building, public road, highway, beach, or any area to which the public has unrestricted access. With the exception of smoke impacts to roadways and/or the Kahului airport resulting from the burning of fields listed in Exhibit 2 and smoke impacts from fires not caused by the permittee (e.g., malicious fires, brush fires), ground level visible smoke entering any residence, business, or public areas shall not exceed a Public Impact Code of three (3), as determined by the HC&S Burn Monitor or by DOH staff.

C. <u>Actions to be taken at the completion of the burn:</u>

(1) <u>Extinguishing flames and minimizing smoke impacts</u> – The following measures shall be implemented to minimize the potential for ground level smoke impacts to public areas due to smoldering.

(a) A supervisor shall remain at the burn site until all flames are extinguished and smoke emissions are minimized. After the fire has burned out (i.e., all flames have been extinguished), personnel and equipment shall remain in the field as necessary to minimize smoke emissions from smoldering piles.

(b) Water wagons shall be used to extinguish smoldering piles and, if necessary, rakes and cranes shall be used to break up the smoldering piles. These "mop up" operations shall be completed within two hours after the end of the burn and repeated as needed thereafter for compliance with Section C.(1)(d) below.

(c) Once emissions following the burn have been reduced to the point where smoke is no longer visible passing beyond HC&S field boundaries and into public areas, equipment may leave the field.

(d) The Harvesting Supervisor responsible for the burn shall ensure that the field is checked periodically for flare-ups or excessive smoldering (i.e., smoldering which results in visible smoke passing beyond HC&S field boundaries and into public areas). Periodic checks shall be made at least once per hour during the first four hours following completion of the burn. After that, checks for smoldering shall be made at maximum intervals of four hours. More frequent checks may be made in fields that are located close to public areas.

(e) Hourly checks for smoldering shall not be discontinued, or shall be resumed, under the following conditions:
i. A flare-up results in flames being observed in the field; or
ii. Smoke is observed leaving the field and entering a public area.
When hourly checks are required beyond the four hours immediately following the end of the burn, they shall continue until smoldering is no longer observed in the field, after which normal monitoring at maximum intervals of four hours may begin.

(f) Periodic checks for smoldering shall continue until harvesting of the field is completed (i.e., all cane to be harvested has been removed from the field) except that checks may be discontinued sooner if both of the following conditions have been met:
   i. No smoldering has been observed in the field for a period of at least eight hours; AND
   ii. At least 36 hours have elapsed since the completion of the burn.

(g) In the event of a flare-up, water wagons and rakes, if necessary, shall be returned to the field to re-extinguish all flames and smoldering. Action shall be initiated to address flare-ups or excessive smoldering within one hour of discovery.

(h) Actions taken for compliance with these provisions relating to smoldering shall be documented in the Post-Burn Smoldering Log (Attachment 1h)

(i) In order to reduce the potential for smoldering piles and resultant ground level smoke after the burn is completed, consideration shall be given during burn preparations to hauling out "fire line" cane (i.e., removing it from the field unburned instead of pushing into the field to be burned) and/or "notching" valve lines (risers) when practicable.

(2) Clearing of burned fields - To the extent possible, burned cane located closest to adjacent residences, roadways, and other public areas shall be cleared first in order to minimize smoke impacts. Fire line cane will also be hauled out of these areas when possible. Clearing of burned fields shall be done so that the cane is moved away from these sensitive areas whenever possible.

D. Recordkeeping and Reporting

(1) Recordkeeping – For each burn, records shall be maintained as described below. To help ensure legibility of scanned documents, all records required by this Exhibit 1 shall be completed in pen. All records, including supporting information, shall be maintained in a true, accurate, and permanent form suitable for inspection, retained for a minimum of three (3) years from the date of such records, and made available to the Department of Health or their representative(s) upon request.

(a) Pre-Burn Checklist (Attachment 1d) - For each burn, a Pre-Burn Checklist shall be completed. This checklist documents the completion of all pre-burn inspections, notifications, and other requirements that are mandatory for every field. Prior to each burn, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall verify that all pre-burn procedures under Exhibit 1 and either Exhibit 2 or Exhibit 3, as applicable, have been completed for the field being burned and shall so certify by signing the Pre-Burn Checklist. The completed checklist for each burn shall be maintained in the harvesting records.

(b) Exhibit 2/Exhibit 3 Checklist – For each burn, either an Exhibit 2 Checklist (for fields where smoke impacts to certain public areas, such as roads and airports, cannot be avoided) or an Exhibit 3 Checklist (for all other fields) shall be completed. This checklist documents additional, field-specific requirements for each burn. For each burn, the Harvesting Supervisor in charge of the burn shall verify that all burn procedures under Exhibit 2 or Exhibit 3, as applicable, have been completed for the field being burned and shall so certify by signing the Exhibit 2 or Exhibit 3 Checklist. The completed checklist for each burn shall be maintained in the harvesting records.

(c) Burn Monitor Log (Attachment 1e) – For each burn, the burn location, start and end times, wind speed and direction, and information on smoke plume behavior and smoke impacts throughout the burn shall be recorded on the Burn Monitor Log (see additional details under B.(1)). All photographs taken during burn monitoring shall be appended to and considered part of the Burn Monitor Log; photographs may be maintained in electronic format. The completed Burn Monitor Log for each burn shall be retained in the harvesting records.

(d) Burn Justification Log (Attachment 1g) – When a burn has resulted in visible smoke impacts to a public area (other than smoke impacts to public roads and/or the airport from burning an Exhibit 2 field), the Harvesting Manager's determination that a subsequent burn on the same day is not expected to impact the same public area shall be documented on the Burn Justification Log. The Burn Justification Log, when required, shall be retained with the records for the subsequent burn in the harvesting records.

(e) Post-Burn Smoldering Log (Attachment 1h) – All post-burn field checks for smoldering and associated corrective actions shall be recorded on the Post-Burn Smoldering Log. The completed Post-Burn Smoldering Log shall be retained in the harvesting records.

(f) Daily Weather and Dispersion Forecast (Attachment 1j), Weather Data – Copies of each daily smoke management weather and dispersion forecast shall be maintained in the harvesting records. A complete record of data output from HC&S weather stations is maintained in the weather computer memory.

(g) Air Quality Index "Screen Shot" – Copies of each "screen shot" of the EPA AIRNow website taken to document the Air Quality Index observed within one hour prior to each burn shall be maintained in the harvesting records.

(2) Reporting

(a) Weekly Report - Within seven (7) days after the end of each week, the Harvesting Manager or his designee shall submit to the Department of Health Clean Air Branch (Honolulu) a copy of each of the records listed in Section D.(1) above for each burn conducted during the week. Records may be submitted electronically or by hard copy. For the purposes of this reporting requirement, Friday shall be considered the end of the week.

(b) Reporting of Deviations – Within five (5) working days after discovery of any deviation from a permit requirement, including the procedures specified in Exhibits 1, 2, and 3 and accompanying attachments, HC&S shall submit a written report to the Department of Health, Clean Air Branch (Honolulu) identifying the deviation, the probable cause, and any corrective actions or preventive measures implemented as a result. The Permit Deviation Report Form (Attachment 1k) shall be used for this purpose, and a copy of each report shall be retained in the harvesting records.

E. Weather station locations and operation

(1) Locations and data collected - HC&S operates both fixed and mobile weather stations for collecting weather data to be used in making burn determinations. Each station provides data on rainfall, wind speed and direction, temperature, and relative humidity. Fixed weather stations are listed in the attached table (Attachment 1i) and locations are shown on the harvest map.

(2) Mobile station, use of alternate stations - The mobile weather station will normally be located near sensitive downwind areas for each burn. In the event that any weather station specified for use in making burn determinations in Exhibit 2 or 3 is out of service, either the mobile station or the nearest alternate station will be used instead.

(3) Data readouts, station maintenance - Weather stations provide readouts to a central computer located at the HC&S Main Office. Weather station outputs are also provided directly to Western Weather Group for use in preparing the daily smoke dispersion forecast. Readouts from each weather station are checked daily during the harvest season and any station that provides readings which appear to be inconsistent or unreasonable is serviced as soon as is practicable to ensure proper operation. Each station's sensors are cleaned regularly to ensure optimum performance. Each station is calibrated quarterly to ensure that all sensors operate properly.

Attachments to Exhibit 1

Attachment 1a – Cane Burn Notification Listing
Attachment 1b – Sample Written Notice
Attachment 1c – List of Schools Adjacent to HC&S Sugarcane Fields
Attachment 1d – Pre-Burn Checklist
Attachment 1e – Burn Monitor Log
Attachment 1f – Smoke Pattern Codes and Public Impact Codes
Attachment 1g – Burn Justification Log
Attachment 1h – Post-Burn Smoldering Log
Attachment 1i – Listing of Weather Stations
Attachment 1j – Sample WWG Daily Weather and Dispersion Forecast
Attachment 1k – Permit Deviation Report Form

FIELD	WRITTEN NOTICE	CALL LIST	HIGHWAY WARNINGS
100	OLD MAUI HIGH SCHOOL	PAIA	SIGNS/GUARDS HOLOMUA RD.
101		PAIA	
102		PAIA	
103		PAIA	SIGNS/GUARDS BALDWIN AVE.
104	KUAU	PAIA/KUAU	SIGNS/GUARDS HANA HWY.
105	KUAU	PAIA/KUAU	SIGNS/GUARDS HANA HWY.
106		PAIA	SIGNS/GUARDS BALDWIN AVE.
107	KUAU	PAIA/KUAU	SIGNS/GUARDS HANA HWY.
108		KUAU	SIGNS/GUARDS HANA HWY.
109		KUAU	
110		PAIA	
111	MAKAWAO UNION CHURCH/ANUENUE PRESCHOOL, ADJACENT RESIDENTS	PAIA	SIGNS/GUARDS BALDWIN AVE.
112		PAIA	
113	MAKAWAO UNION CHURCH/ANUENUE PRESCHOOL, ADJACENT RESIDENTS	PAIA	SIGNS/GUARDS BALDWIN AVE.
114		PAIA/KUAU	SIGNS/GUARDS HOLOMUA RD,
115		PAIA/KUAU	
116	MAUNAOLU/ADJACENT RESIDENTS	PAIA, MONTESSORI SCHOOL	
117		PAIA, MONTESSORI SCHOOL	
118	MAUNAOLU	PAIA, MONTESSORI SCHOOL	
119		PAIA, MONTESSORI SCHOOL	
120		PAIA	
200	HOLY ROSARY CHURCH/ALOHA KAI ACADEMY, ADJACENT RESIDENTS, PAIA SCHOOL	PAIA	SIGNS/GUARDS BALDWIN AVE.
201			
202			
203			
204	PAIA SCHOOL/ADJACENT RESIDENTS	PAIA	SIGNS/GUARDS BALDWIN AVE.
205			
206			
207	DORIS TODD SCHOOL/SKILL VILLAGE	PAIA	SIGNS/GUARDS BALDWIN AVE.
208	HOLY ROSARY CHURCH/SKILL VILLAGE	PAIA	SIGNS/GUARDS BALDWIN AVE.
209			
210	ADJACENT KUAU RESIDENTS	PAIA/KUAU	SIGNS/GUARDS HANA HWY.
211	LOWER PAIA	PAIA	SIGNS/GUARDS BALDWIN AVE.
212	ADJACENT RESIDENTS/HONGWANJI MISSION		SIGNS/GUARDS HANA HWY.
213			
214	LOWER PAIA	PAIA	
300		KAMEHAMEHA SCHOOL	SIGNS/GUARDS HALEAKALA & HAILIIMAILE RD.
301		PUKALANI/KAMEHAMEHA SCH.	SIGNS/GUARDS HALEAKALA HWY.

FIELD	WRITTEN NOTICE	CALL LIST	HIGHWAY WARNINGS
302		PUKALANI/KAMEHAMEHA SCH.	
303			SIGNS/GUARDS HALEAKALA HWY.
304			SIGNS/GUARDS HALEAKALA HWY.
305			
306			SIGNS/GUARDS HALEAKALA HWY.
307		KAMEHAMEHA SCHOOL	
308			SIGNS/GUARDS HALEAKALA HWY.
309			
310			
311			
312		KAMEHAMEHA SCHOOL	
313			
314		KAMEHAMEHA SCHOOL	
400			
401		KAMEHAMEHA SCHOOL	SIGNS/GUARDS PULEHU ROAD, OMAOPIO ROAD
402			
403			
404			SIGNS/GUARDS PULEHU ROAD
405			SIGNS/GUARDS PULEHU ROAD, OMAOPIO ROAD
406			
407			SIGNS/GUARDS PULEHU ROAD
408			
409			
410			
411		KIHEI	
412		KIHEI	
413		KAMEHAMEHA SCHOOL	SIGNS/GUARDS PULEHU ROAD
414		KIHEI	
415		KIHEI	
416		KIHEI	
417		KIHEI	
418		KIHEI	
500			SIGNS/GUARDS HALEAKALA HWY.
501			SIGNS/GUARDS HALEAKALA HWY.
502			SIGNS/GUARDS HALEAKALA HWY.
503			
504			
505			SIGNS/GUARDS PULEHU ROAD
506			SIGNS/GUARDS PULEHU ROAD
507			SIGNS/GUARDS HALEAKALA HWY.
508			SIGNS/GUARDS HALEAKALA HWY.

FIELD	WRITTEN NOTICE	CALL LIST	HIGHWAY WARNINGS
509			SIGNS/GUARDS HALEAKALA HWY.
510	AMERON QUARRY, COUNTY LANDFILL		
511	AMERON QUARRY, COUNTY LANDFILL		SIGNS/GUARDS PULEHU ROAD
512	AMERON QUARRY, COUNTY LANDFILL		
600	SPRECKELSVILLE	SPRECKELSVILLE	SIGNS/GUARDS HANA HWY.
601		AIRPORT	
602			SIGNS/GUARDS HALEAKALA HWY.
603			SIGNS/GUARDS HALEAKALA HWY.
604		AIRPORT	SIGNS/GUARDS HALEAKALA & HANA HWY.
605		AIRPORT	SIGNS/GUARDS HALEAKALA & HANA HWY.
606		AIRPORT	SIGNS/GUARDS PULEHU RD.
607		AIRPORT	SIGNS/GUARDS HANA HWY.
608		AIRPORT	SIGNS/GUARDS HANA HWY.
609		AIRPORT	SIGNS/GUARDS HANA HWY.
610		AIRPORT	SIGNS/GUARDS HALEAKALA & HANA HWY.
611	SPRECKELSVILLE	AIRPORT/SPRECKELSVILLE	SIGNS/GUARDS HANA HWY.
700			SIGNS/GUARDS PULEHU RD.
701			SIGNS/GUARDS PULEHU RD.
702			SIGNS/GUARDS PULEHU RD.
703			
704			
706	PUUNENE SCHOOL		SIGNS/GUARDS PULEHU RD.
707	PUUNENE SCHOOL		SIGNS/GUARDS MOKULELE HWY.
708	MAUI HARDWOODS	AIRPORT	SIGNS/GUARDS MOKULELE HWY.
709		AIRPORT	SIGNS/GUARDS HANA HWY.
710		AIRPORT	SIGNS/GUARDS PULEHU RD.
711		AIRPORT	SIGNS/GUARDS HANSEN RD.
712		AIRPORT	SIGNS/GUARDS HANSEN RD.
714		AIRPORT	SIGNS/GUARDS KUIHELANI HWY.
715		AIRPORT	SIGNS/GUARDS KUIHELANI HWY.
716		AIRPORT	SIGNS/GUARDS MOKULELE HWY.
717	MAUI HARDWOODS	AIRPORT	SIGNS/GUARDS MOKULELE HWY.
718		AIRPORT	SIGNS/GUARDS MOKULELE HWY.
719		MAALAEA	SIGNS/GUARDS KUIHELANI
720			SIGNS/GUARDS KUIHELANI
735		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
737		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
741		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
743		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
745		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
747		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY

FIELD	WRITTEN NOTICE	CALL LIST	HIGHWAY WARNINGS
749		MAALAEA	SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY
751		MAALAEA	SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY
753		MAALAEA	SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY
757		MAALAEA	SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY
761		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
763		MAALAEA	SIGNS/GUARDS HONOAPIILANI HIGHWAY
765		MAALAEA	SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY
767		MAALAEA	SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY
800			SIGNS/GUARDS PULEHU RD.
801			
802			
803			
805			
806			
807			
808			
809			
810		KIHEI	
811		KIHEI	
812		KIHEI	
813			
814			
815			
816		KIHEI	
817		KIHEI	
818			
819		KIHEI	
820	HALE PIILANI/KIHEI VILLAGES SUBDIVS.	KIHEI	
821		KIHEI	
822		KIHEI	
823	HALE PIILANI SUBDIVISION	KIHEI	
900	MAUI HARDWOODS	KIHEI	SIGNS/GUARDS MOKULELE HWY.
901	HUMANE SOCIETY		SIGNS/GUARDS MOKULELE HWY.
902			SIGNS/GUARDS MOKULELE HWY.
903			
904			
905		MAALAEA	
906	MAALAEA CONDOS	MAALAEA	SIGNS/GUARDS N. KIHEI RD..
907	MAALAEA CONDOS	MAALAEA	SIGNS/GUARDS N. KIHEI RD.
908		KIHEI	SIGNS/GUARDS MOKULELE HIGHWAY
909		KIHEI	

FIELD	WRITTEN NOTICE	CALL LIST	HIGHWAY WARNINGS
910		KIHEI	
911		KIHEI	SIGNS/GUARDS MOKULELE HIGHWAY
912		KIHEI	SIGNS/GUARDS MOKULELE HWY.
913	MAALAEA CONDOS	MAALAEA	SIGNS/GUARDS N. KIHEI RD..
914	HUMANE SOCIETY	KIHEI	SIGNS/GUARDS MOKULELE HWY.
915		KIHEI	SIGNS/GUARDS MOKULELE HWY.
916	SUGAR BEACH(KIHEI)	KIHEI	SIGNS/GUARDS MOKULELE HWY.
917	SUGAR BEACH(KIHEI)	KIHEI	SIGNS/GUARDS MOKULELE HWY.
918	MAALAEA CONDOS	MAALAEA	SIGNS/GUARDS MAALAEA RD.
919		MAALAEA	SIGNS/GUARDS KUIHELANI HWY.
920		MAALAEA	SIGNS/GUARDS KUIHELANI HWY.
921		MAALAEA	SIGNS/GUARDS KUIHELANI HWY.
922		MAALAEA	SIGNS/GUARDS KUIHELANI HWY.

HARVESTING SCHEDULE

This is to inform you that we are harvesting cane in your neighborhood and will be burning the field adjacent to your home at approximately _____ on _____.

The harvesting and subsequent follow-up field operations may cause temporary inconvenience to you and your family. We will do our utmost to speed up the operations and get the field under irrigation as soon as possible to alleviate the dust condition.

Your understanding and patience will be greatly appreciated.

Hawaiian Commercial & Sugar Company

HARVESTING SCHEDULE

This is to inform you that we are harvesting cane in your neighborhood and will be burning the field adjacent to your home at approximately _____ on _____.

The harvesting and subsequent follow-up field operations may cause temporary inconvenience to you and your family. We will do our utmost to speed up the operations and get the field under irrigation as soon as possible to alleviate the dust condition.

Your understanding and patience will be greatly appreciated.

Hawaiian Commercial & Sugar Company

Attachment 1c

List of Schools Adjacent to HC&S Sugar Cane Fields

As required by Exhibit 1 to the agricultural burning permit, the following is a list of operating hours for schools located adjacent to HC&S sugar cane fields which could be impacted by smoke from agricultural burning. As required by the permit, burning of fields adjacent to these schools will not be conducted while school is in session or within one hour of the start of school.

School	Hours	
Doris Todd Memorial Christian Schools (Paia)	0730-1415	after school care to 1730
Kaahumanu Hou School (Puunene Avenue)	0800-1630	no after school or summer programs
Paia School (Baldwin Avenue, Paia)	0750-1730	includes after school program; no summer program
Anuenue Pre-School (Baldwin Avenue/Makawao Union Church, Paia)	0715-1715	expected to become part of Aloha Kai Academy in January 2014
Aloha Kai Academy (Baldwin Avenue/Holy Rosary Church, Paia)	0715-1715	no after school program

Hawaiian Commercial and Sugar Company Pre-Burn Checklist

Field:	Date:	Start Time:	End Time:

Prior to burning, verify each item below is completed and initial in the space provided.

	Permitted Field: The Harvesting Supervisor in charge of the burn has confirmed that the field planned to be burned is listed on the current Agricultural Burning Permit. (Check against the permit or a certified copy of the harvest schedule.)
	"No Burn" Declaration: Contacted Harvesting Manager prior to burn, verified Department of Health has not notified Harvesting Manager of a declared "No Burn" period in effect.
	Correct Forms Are Being Used: Field Number on Exhibit 2 or 3 checklist being used matches the number of the field to be burned. Write the field numbers in the boxes below. If the numbers don't match, **STOP** and rectify the discrepancy before proceeding. **Field number on the Exhibit 2 or Exhibit 3 Checklist being used:** ____ **Number of the field to be burned today:** ____
	Restrictions on Burn Times: All restrictions on burn times will be complied with.
	Precautions for Schools: Exhibit 1 precautions relating to minimizing impacts on schools have been reviewed and will be complied with, as applicable.
	Burn Justification: If a prior burn on the same day resulted in a Public Impact Code of two or higher (other than impacts to a roadway/airport from an Exhibit 2 field), a Burn Justification Log has been completed. Mark "NA" if not applicable.
	Vog Forecast: WWG vog forecast is in "green" range or is not available (NA). Do not burn if vog forecast is in "yellow" or "red" range. Circle forecast condition: **GREEN YELLOW RED NA**
Time	**Air Quality Index:** AQI was checked on AirNOW website within one hour of burn and AQI is in "good" or "moderate" range, or is not available (NA). For Paia, circle NR (not required) if the field is located to the south of Kailua Gulch. **Record time AQI checked at right and print web page screen.** Circle AQI below: **Kihei AQI: GOOD** - (OK to burn) **MODERATE** – (burn only with CAUTION) **NA OTHER** **Paia AQI: NR GOOD** - (OK to burn) **MODERATE** – (burn only with CAUTION) **NA OTHER**

Public Notifications: Make reasonable attempt to complete all notifications specified in the Cane Burn Notification Listing. (For items not specified in the Cane Burn Notification Listing, enter NA in the box.)

	Delivery of written notices to nearby residential premises, churches, schools, and/or businesses (per Cane Burn Notification List) made or attempted at least two days prior to burn.
	Telephone notifications to designated call lists (per Cane Burn Notification List) made or attempted at least two hours prior to scheduled burn (check with Burn Monitor to verify completion).
	Signs and/or security guards/police posted on affected roadways (per Cane Burn Notification List).
Time	Maui Police Central Dispatch and fire station nearest the burn have been notified at least one hour prior to burn (delay start of burn if necessary to meet this pre-notification requirement). **Record time of call in box at left.**

Inspection of Fields:

	Accessible areas of field to be burned have been inspected for materials not authorized to be burned. Unauthorized materials include logs greater than four inches in diameter (unless from plants found growing in the field) and any batteries, abandoned vehicles, factory wastes, tires, petroleum products, hazardous wastes, 55-gallon drums, appliances, furniture, or other similar items.
	Any unauthorized materials found during the inspection have been removed from the burn area.
	Farm Manager responsible for the field to be burned has confirmed that calcium hypochlorite containers have been removed from areas located in or within 50 feet of the burn area.
	Fire line cleared or valve lines notched to prevent inadvertent damage or burning of irrigation risers.
	Confirmed oval hose has been removed from along field edges to prevent burning.

Assessment of Meteorological Conditions:

	Field number on the Western Weather Group smoke management and dispersion forecast matches the number of the field that is to be burned. Write the field numbers in the boxes below. If the numbers don't match, **STOP** and rectify the discrepancy before proceeding. **Field number on the Western Weather Group Daily Forecast:** ____ **Number of the field to be burned today:** ____
	Weather data, including Western Weather Group smoke management and dispersion forecasts, HC&S weather station data, and past burn records reviewed, assessment of likely smoke plume behavior completed.
	Existing meteorological conditions are anticipated to minimize ground level visible smoke from entering residences, businesses, or other public areas.
	Checked WWG predicted dispersion conditions. Dispersion is predicted to be "fair" or better in field to be burned. Do not burn if "poor" dispersion is predicted.
	Checked WWG predicted temperature inversion conditions. No "strong" or "moderate" temperature inversion was predicted for this field at the time of this burn. If a "strong" or "moderate" inversion is predicted at the scheduled burn time, burning must be delayed until the inversion has broken.
	Checked rainfall in/near field. If rainfall in previous 24 hours was 0.1 inches or more, checked field mat and confirmed field is dry enough to burn.

Harvesting Manager Certification (Harvesting Manager/Acting Manager must review and sign prior to start of burn):

All pre-burn procedures required for this field under Exhibit 1 and either Exhibit 2 or Exhibit 3, as applicable, have been completed. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.	**Signature:**

Hawaiian Commercial & Sugar Company
Burn Monitor Log

Date:	Field:	Acres Burned:
Burn Start Time:	Wind Speed/Direction:	Measured From:
Burn End Time:	Wind Speed/Direction:	Measured From:

While monitoring this burn, did you observe visible smoke (Public Impact Code ≥ 2) in any residence, business, school, public road, highway, beach, or other area to which the public has unrestricted access?	YES / NO
If yes, notify Harvesting Superintendent or Harvesting Supervisor and enter time of notification at right. Except for smoke in public roads or at the airport when burning Exhibit 2 fields, visible smoke in public areas requires that no further burning shall be conducted in the area until conditions improve.	Time: _____
I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.	Signature of Burn Monitor:

Record smoke observations made during the burn below. If visible smoke is observed, indicate extent and duration of visible smoke.

Time:	Location:	Wind Speed/Direction:

Observations:

Smoke Plume Code:

Public Impact Code:

Public Areas Impacted

Roads/Highways:

Residential/Commercial/Other:

Photo Taken YES NO	Check box at right if lighting inadequate.		Time of Photo:		Start:	End:	Duration:

Time:	Location:	Wind Speed/Direction:

Observations:

Smoke Plume Code:

Public Impact Code:

Public Areas Impacted

Roads/Highways:

Residential/Commercial/Other:

Photo Taken YES NO	Check box at right if lighting inadequate.		Time of Photo:		Start:	End:	Duration:

NOTE: THIS IS A TWO PAGE FORM. ATTACH CONTINUATION SHEETS AS NEEDED.

Hawaiian Commercial & Sugar Company
Burn Monitor Log
Continuation Sheet, Page ____ of ____

Date:	Field:	Acres Burned:

Record smoke observations made during the burn below. If visible smoke is observed, indicate extent and duration of visible smoke.

Time:	Location:	Wind Speed/Direction:

Observations:

Smoke Plume Code:

Public Impact Code:

Public Areas Impacted

Roads/Highways:

Residential/Commercial/Other:

Photo Taken YES NO	Check box at right if lighting inadequate.		Time of Photo:		Start:	End:	Duration:

Time:	Location:	Wind Speed/Direction:

Observations:

Smoke Plume Code:

Public Impact Code:

Public Areas Impacted

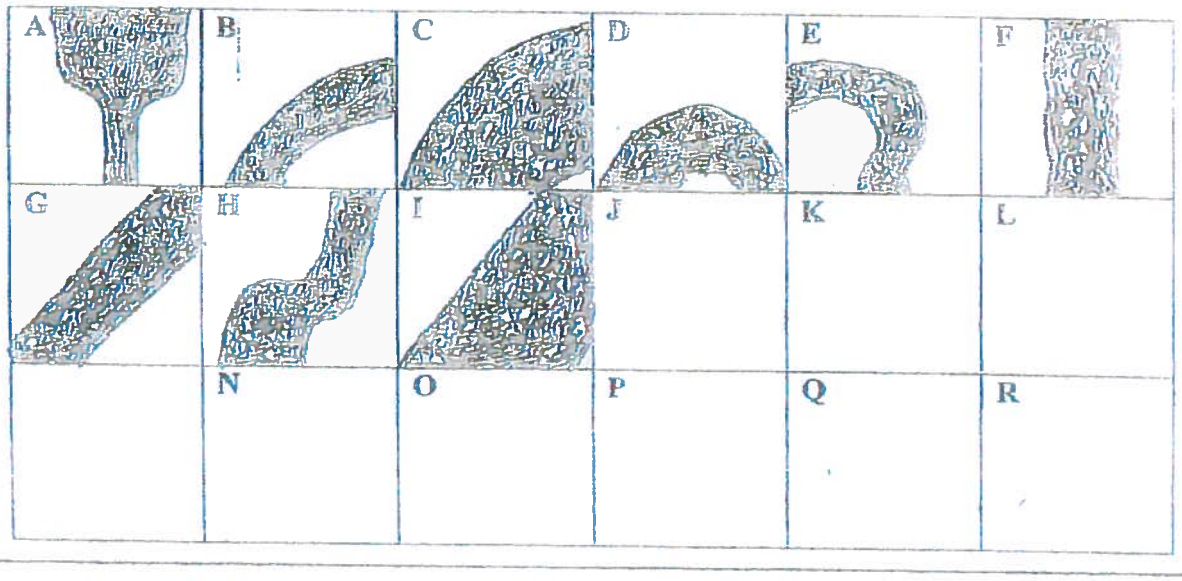
Roads/Highways:

Residential/Commercial/Other:

Photo Taken YES NO	Check box at right if lighting inadequate.		Time of Photo:		Start:	End:	Duration:

ATTACH ADDITIONAL CONTINUATION SHEETS AS NEEDED

SMOKE PATTERN CODES



PUBLIC IMPACT CODES:

Code	Description
1	No visual impairment Slight odor of smoke
2	Visible smoke present Odor may or may not be present
3	Visible smoke with some visual impairment Visibility greater than 500 feet
4	Visual impairment Visibility 500 feet or less intermittently (for periods of one to two minutes)
5	Heavy smoke Poor visibility, steadily 100 to 500 feet
6	Heavy smoke Visibility less than 100 feet
7	Very heavy smoke No visibility

Attachment 1f

Hawaiian Commercial & Sugar Company
Burn Justification Log

Completion of this form is required prior to conducting additional burns after a previous burn conducted on the same day has resulted in visible smoke impacts (Public Impact Code of two (2) or greater) to a public area other than smoke impacts to a public road or to the Kahului airport resulting from burning an Exhibit 2 field. The Harvesting Manager or his designee must complete and sign this form to document his/her determination that conditions under which any subsequent burns would be conducted are unlikely to result in visible smoke impacts to the same public area(s) affected by the earlier burn.

Provide the following information regarding the original burn:

Field:		Acres Burned:		Time of Burn:	

What public areas were impacted by visible smoke as a result of this burn (other than roads, airport from Exhibit 2 fields)?

Describe the visible smoke impacts from this burn (extent, duration, public impact code).

Describe any problems encountered during this burn which may have contributed to ground level visible smoke in public areas (e.g., unexpected changes in wind conditions, unexpected temperature inversion, dispersion not as predicted, unexpected rainfall, field wetter than anticipated, unanticipated delays in firing field, etc.).

Provide the following information for the proposed additional burn:

Field:		Acres to Be Burned:		Planned Time of Burn:	

What corrective actions or preventative measures, if any, have been implemented to address problems encountered during the earlier burn in an effort to reduce visible smoke impacts (if none, explain)?

Describe any changes in meteorological conditions or differences in field conditions since the earlier burn that are expected to improve smoke dispersion and reduce the potential for smoke impacts to the same area.

Identify public areas downwind of the planned burn that are most likely to be impacted in the event of inadequate smoke dispersion.

Notify the Department of Health by telephone of the intent to conduct additional burns.

Call time:		Name of person who took call:	

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Name (Harvesting Manager or designee)	Signature	Date

Hawaiian Commercial & Sugar Company
Post-Burn Smoldering Log

Use this form to document post-burn field inspections for smoldering and flare-ups and any corrective actions implemented.

Field:		Burn Date:		Burn End Time:		Hourly Checks Required Until:	

- Burn end time is when there are no longer any visible flames in the field.

Time of Field Check	Hours After Burn End	Check Completed By (initials)	Visible Smoke Present in Field? N	L	M	H	Visible Smoke Leaving Field, Entering Public Areas? (Yes/No)	Time Deployed: Rake	Water Wagon	Comments
Conduct periodic checks of the field at least once per hour during the first four hours following the end of the burn.										
After the first four hour following the end of the burn, conduct periodic checks of the field at maximum intervals of four hours. Note that resumption of hourly monitoring is required per Exhibit 1 in the event of a flare-up or if visible smoke is observed leaving the field and entering public areas.										

Codes for smoke observed in field: **N**=None **L**=Light **M**=Medium **H**=Heavy

CONTINUE MAKING CHECKS UNTIL DISCONTINUATION OF MONITORING IS PERMITTED PER EXHIBIT 1.
ATTACH CONTINUATION SHEETS AS NEEDED TO DOCUMENT CHECKS.

Hawaiian Commercial & Sugar Company
Post-Burn Smoldering Log
Continuation Sheet – Page ____ of ____

Use this continuation sheet to document post-burn field inspections for smoldering and flare-ups and any corrective actions implemented.

Field:		Burn Date:		Burn End Time:	

- Burn end time is when there are no longer any visible flames in the field.

Time of Field Check	Hours After Burn End	Check Completed By (initials)	Visible Smoke Present in Field?				Visible Smoke Leaving Field, Entering Public Areas? (Yes/No)	Time Deployed		Comments
			N	L	M	H		Rake	Water Wagon	
Conduct periodic checks of the field at maximum intervals of four hours. Note that resumption of hourly monitoring is required per Exhibit 1 in the event of a flare-up or if visible smoke is observed leaving the field and entering public areas.										

Codes for smoke observed in field: **N**=None **L**=Light **M**=Medium **H**=Heavy

CONTINUE MAKING CHECKS UNTIL DISCONTINUATION OF MONITORING IS PERMITTED PER EXHIBIT 1
ATTACH ADDITIONAL CONTINUATION SHEETS AS NEEDED TO DOCUMENT CHECKS

Attachment 1i

HC&S Weather Station Network Listing of Weather Stations Which Provide Wind Data			
Station Designation	**Location**	**Division**	**Notes**
102-Field (R15)	Reservoir 15, Field 102	Paia	
107-Upper Paia	Field 107	Paia	Moved from F208 to F107
109-Field (R12)	Reservoir 12, Field 109	Paia	
110-Hamakuapoko	Field 110	Paia	
116-Field (R10)	Reservoir 10, Field 116	Paia	
200-Field (R23)	Reservoir 23, Field 200	Paia	
205-Field (R25)	Reservoir 25, Field 205	Paia	
213-Field (R29)	Reservoir 29, Field 213	Paia	
602-Spreckelsville	Field 602	Paia	
604-Field (R61)	Reservoir 61, Field 604	Paia	
611-Field (R60)	Reservoir 60, Field 611	Paia	
ARP-Airport	Kahului Airport near Field 709	Puunene	
606-Field (R70)	Reservoir 70, Field 606	Puunene	
201-Haliimaile (R22)	Reservoir 22, Field 201	Keahua	
300-Field (R30)	Reservoir 30, Field 300	Keahua	
301-Pukalani	Field 301	Keahua	
311-Field (R35)	Reservoir 35, Field 311	Keahua	
313-Field (R33)	Reservoir 33, Field 313	Keahua	
~~400-Field (R42)~~	~~Reservoir 42, Field 400~~	~~Keahua~~	Wind sensor removed
401-Omaopio	Field 401	Keahua	
414-Pulehu	Field 414	Keahua	
415-Field (R45)	Reservoir 45, Field 415	Keahua	
~~500-Field (R50)~~	~~Reservoir 50, Field 500~~	~~Lowrie~~	Wind sensor removed
501-Field (R51)	Reservoir 51, Field 502	Lowrie	
504-Field (R52)	Reservoir 52, Field 504	Lowrie	
800-Field (R80)	Reservoir 80, Field 800	Lowrie	
805-Field (R81)	Reservoir 81, Field 805	Lowrie	
807-Field (R84)	Reservoir 84, Field 807	Lowrie	
813-Lowrie	Field 818	Lowrie	Moved from F813 to F818
823-Piilani	Field 817	Lowrie	Moved from F823 to F817
KIH-Kihei	Above Piilani Highway in Kihei	Lowrie	
Wailuku (R73)	Reservoir 73	Maalaea	
707-Puunene	Field 707	Maalaea	Moved from F711 to F707
749-Waikapu	Field 749	Maalaea	Moved from F735 to F749
757-Field (R91)	Reservoir 91, Field 906	Maalaea	Across from F757
903-Field (R92)	Reservoir 92, Field 903	Maalaea	
906-Maalaea	Field 906	Maalaea	
911-Field (R90)	Reservoir 90, Field 911	Maalaea	
921-Field Maui Pine	MPC Reservoir, Field 921	Maalaea	
KAP-Kula Ag Park	Kula Ag Park	Mauka Zone	
UHK-UH Kula	Kula	Mauka Zone	
POL-Poli Poli	Poli Poli Park	Mauka Zone	

Rev 12/2013

HC&S Maui Weather & Dispersion Forecast

Western Weather Group
www.westernwx.com/hcs
530-342-1700, fax 530-342-0093
email: forecaster@westernwx.com
by Forecaster Tom Cushman

Thursday March 7, 2013 issued 3:30am HST

HIGHLIGHTS: Land, sea breezes today will give way to active Konas tomorrow causing Central Valley to become more hazy. Very wet conditions developing this weekend as cold front stalls out across the island chain.

WEATHER DISCUSSION: A weak surface high continues to recede toward the Mainland while an active North Pacific storm system's trailing cold front approaches the Hawaiian Islands from the northwest. A more compact, secondary low is expected to approach the southern end of this cold front, reinvigorating this front while direcing this band of active precipitaiton slowly eastward across the island chain most likely over the weekend. Look for land, sea breezes to dominate surface flow today but winds will transition to Konas overnight with these southerly winds gradually strengthening tomorrow before peaking in strength on Saturday. Thus expect hazy, more humid conditions across the plantation today with the loss of the trades. This period of Konas will also tend to draw Big Island vog across Maui beginning tomorrow afternoon but unlikely in concentrations above healthy (i.e. green) levels.

Today's Fields	Burn Time	Dispersion TOB*	Dispersion Later (am)	WINDS* Surface	WINDS* Transport	Morning Inversion	12am-12am Precip POPs	12am-12am Precip Amounts
802	400	poor	fair	ESE 5-10	E 5-10	yes (moderate)	0%	none

*for projected time of burn

General Maui Wind Pattern	Vog?	Vortex?	Dispersion	EMI	Precipitation Windward	Precipitation Leeward
Yesterday: Easterly trades 10-20 G30 mph	Green	yes	Fair/Good	very light	none	none
Today: Land, sea breezes to 20 mph	Green	no	Fair	very light	very light	none
Fri: Konas to 20 mph	Green	no	Fair/Good	very light	very light	very light
Sat: Konas to 25 mph	Green	no	Fair/Good	light	light	light

Extended Outlook

		Plantation Precipitation
Sun:	Light to Moderate konas, rain likely	Moderate
Mon:	Light to Moderate konas, rain likely	Light/Moderate
Tue:	Light to Moderate northerlies	None
Wed:	Light to Moderate northerlies	None
Thu:	Northerlies→Trades, isolated showers	Very Light
Fri:	Moderate trades, scattered showers	Light

Kahului Airport Rainfall Summary

Last 24hrs 0.00
year to date (since 1/1)
4.98, 96% of normal

2AM Transport Winds (LIH)

	Today	Wed 3/6
1000FT	NNW 2	NE 11
2000FT	E 5	ENE 14
3000FT	ESE 5	E 15
4000FT	S 1	E 15
5000FT	N 0	E 16

3AM Plantation Stability

Windward	Layer Depth	Today ΔT	Today Wind	Today Rating	Wed 3/6 ΔT	Wed 3/6 Wind	Wed 3/6 Rating
201-602	710	0.7	E 4	Poor	0.4	NNE 9	Poor
301-201	215	0.3	E 8	Poor	-4.0	E 12	Good
KAP-301	330	-1.4	ESE 4	Good	-0.8	E 7	Good

Leeward	Depth	ΔT	Wind	Rating	ΔT	Wind	Rating
414-823	464	0.4	E 3	Poor	-0.1	ENE 3	Fair
401-414	423	1.1	SE 6	Poor	0.5	ESE 6	Poor
KAP-401	353	0.0	E 5	Fair	-0.2	ENE 4	Fair

PRECIPITATION NOTES: Outside of some isolated interior mauka shower activity, Maui will remain dry today. These nearly dry conditions should continue Friday before a cold front sweeps across the island chain on Saturday to return significant rainfall to the plantation late in the day.

WIND/CAUTIONARY NOTES: The loss of trades have led to strong, deeper inversions for the southeastern plantation (including F802). Best to delay burning until after sunrise to improve initial plume rise although even then the transport of smoke off the island will be rather slow.

SAMPLE FORECAST

Attachment 1j

Hawaiian Commercial & Sugar Company
Agricultural Burning Permit Number AGP-_____
Deviation Report Form

Use this form to report to the Department of Health any deviations from requirements of the Agricultural Burning Permit, including requirements specified in any Exhibit or Attachment.
Deviation reports must be submitted in writing to the Department of Health, Clean Air Branch in Honolulu (with a copy to the Maui District Health Office) within five working days after the deviation occurred.

Date of Deviation:		Affected Field:	

Identify the condition(s) of the permit, permit exhibit, or attachment from which a deviation occurred.

Describe the deviation.

What was the cause of this deviation?

Describe any corrective actions or preventative measures implemented to correct the deviation and/or to prevent a recurrence, including the date by which corrective actions were or will be implemented.

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Name (Harvesting Manager or designee)	**Signature**	**Date**

The Harvesting Manager shall notify HC&S Environmental Affairs within 24 hours of discovery of any deviation required to be reported to the Department of Health. Environmental Affairs will assist the Harvesting Manager in completing this form and will submit the completed and signed form to the Department of Health. Copies of each report shall be routed to the Plantation General Manager and retained in the harvesting records.

Hawaiian Commercial & Sugar Company
2014 Agricultural Burning Permit - Exhibit 2

This exhibit describes specific procedures to be followed for pre-harvest burning of sugarcane in identified problem fields to be harvested during the 2014 season. Problem fields are those fields that, due to their location, cannot be harvested without some visible smoke impacts on neighboring areas, such as public roads and the Kahului Airport. However, the procedures included in this exhibit are intended to ensure that visible smoke entering public areas is kept to a minimum.

The Harvesting Manager shall ensure that all fields listed in Exhibit 2 are burned in accordance with these procedures in addition to those described in Exhibit 1 (except as noted in Exhibit 1, Section B(2); see Section B below).

A. **Identification of fields** - Exhibit 2 procedures are being submitted for the following fields or groups of fields which are scheduled to be harvested during the 2014 harvesting season or are included on the list of "unscheduled fields":

- Hana Highway Field **104, 108, 600**
- Hana Highway Field **107**
- Baldwin Avenue Field **111**
- Baldwin Avenue Field **200**
- Baldwin Avenue Field **207**
- Haleakala Highway Fields **301, 303, 304, 308, 501, 502, 507, 508, 509, 603**
- Pulehu Road Fields **401, 405, 407, 606, 800**
- Kahului Airport Fields **601, 604, 605, 607, 608, 610, 709, 710, 711, 712, 714**
- Mokulele Highway Fields **707, 708, 716, 717, 900, 901, 902, 908, 911, 916, 917**
- Kuihelani Highway Fields **719, 751, 753, 767, 919**
- North Kihei Road Field **913**

The location of each field listed above is shown on the field map submitted with the 2014 burn permit application. Burn procedures specific to each field are described in the attached exhibits.

B. **Suspension of burns due to changes in wind conditions** - Burning in problem fields shall be undertaken only under the meteorological conditions specified in this exhibit. Monitoring and record keeping procedures during the burn shall be as described in Section B(1) of Exhibit 1 except that average wind speed and direction shall also be measured and recorded on the Exhibit 2 checklist prior to the start of each fire within a field. The Harvesting Supervisor in charge of the burn shall monitor wind conditions during each burn. In the event that the wind speed or direction changes during the burn, the Harvesting Supervisor shall re-evaluate wind conditions to determine whether the conditions specified in this exhibit are still being met. If the specified conditions are no longer met, the Harvesting Supervisor shall ensure that no further burns are conducted in that field until the required conditions are again met.

C. **Use of weather station data for burn decisions** - HC&S operates both fixed and mobile weather stations for collecting weather data to be used in making burn determinations. The weather stations to be used for making burn decisions in a field are specified in the Exhibit 2 checklist for that field. In the event that any weather station specified for use in making burn determinations in Exhibit 2 is out of service, either the mobile station or the nearest alternate station will be used instead.

When determining whether wind speeds are within the limits specified in the Exhibit 2 checklist, the Harvesting Supervisor in charge of the burn shall consider the average wind speed being recorded by the appropriate weather station(s). If, at the time that a burn determination is being made, winds are occasionally gusting at speeds in excess of the maximum speed specified for burning in the exhibit, the Harvesting Supervisor shall monitor wind speeds prior to burning sufficiently to confirm that average wind speeds are not increasing above the maximum speed specified in the exhibit.

Allowable wind directions for burning are stated *from* a given direction. That is, when a northerly wind direction is specified, allowable winds are blowing from the north *toward* the south. In addition, allowable winds are specified in the exhibit as a range of directions starting from the first direction listed and moving *clockwise* through the second direction listed. Thus, if the exhibit specifies winds must be "north/northeast to southeast", then the allowable wind directions would be from a heading of north/northeast (22.5 degrees on a compass) through east (90 degrees) to southeast (135 degrees).

EXHIBIT 2	Burn Procedures for Fields 104, [redacted] 108, [redacted] 600, [redacted] (adjacent to Hana Highway)

Reason for listing as problem fields: Close proximity to Hana Highway

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 25 miles per hour
- Southeast to south winds less than 15 miles per hour

Weather data to determine optimum wind conditions will be from the Paia Division weather stations nearest to, or most representative of, the field being burned.
(Record wind data below prior to the start of each burn.)

☐ 2. Burning will be conducted between 0400 and 0600 (to take advantage of light drainage winds at this time of day), or between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

☐ 3. Signs and/or guards will be posted on Hana Highway.

☐ 4. Phone calls will be attempted to the Paia (Fields **104**, **105**), Kuau (Fields **104**, **105**, **108**) and Spreckelsville (Fields **600**, **611**) phone notification lists. Phone call will be made to the Kahului Airport Control Tower (Field **611**).

☐ 5. Attempts will be made to deliver written notices to Kuau (Fields **104**, **105**) and Spreckelsville (Fields **600**, **611**) residential premises two days prior to the burn. For Field **212**, attempts will be made to deliver written notices to adjacent residential premises and to the Hongwanji mission two days prior to the burn.

☐ 6. To minimize the potential for smoke impacts to nearby residences, approximately 25 acres of cane located along Hana Highway in Field **105** will be harvested unburned.

☐ 7. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Field 107 (adjacent to Hana Highway)

Reason for listing as problem fields: Close proximity to Hana Highway

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions for the portion of the field located below Lower Hamakuapoko Road:

- North to northeast trade winds less than 25 miles per hour

Burning will be undertaken only under the following wind conditions for the portion of the field located above Lower Hamakuapoko Road:

- Tradewinds (North to east) less than 25 miles per hour
- Southeast to south winds less than 15 miles per hour

Weather data to determine optimum wind conditions will be from the Paia Division weather stations nearest to, or most representative of, the field being burned.
(Record wind data below prior to the start of each burn.)

❑ 2. Burning will be conducted between 0400 and 0600 (to take advantage of light drainage winds at this time of day), or between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

❑ 3. Signs and/or guards will be posted on Hana Highway.

❑ 4. Phone calls will be attempted to the Paia and Kuau phone notification lists.

❑ 5. Attempts will be made to deliver written notices to Kuau residential premises two days prior to the burn.

❑ 6. Approximately seven acres of cane directly adjacent to residences will be harvested unburned. The remainder of the portion of the field located below Lower Hamakuapoko Road will also be harvested unburned if wind conditions are not favorable for burning at the time of harvest.

❑ 7. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Field 111[redacted] (adjacent to Baldwin Avenue)

Reason for listing as problem fields: Close proximity to Baldwin Avenue (These fields are also located near Makawao Union Church and residences in the Upper Paia area.)

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Tradewinds (north to east) less than 20 miles per hour
- Kona winds (southeast to southwest) less than 15 miles per hour

Weather data to determine optimum wind conditions will be from weather stations in fields 110 and 201.
(Record wind data below prior to the start of each burn.)

☐ 2. Burning will be conducted between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700) to minimize traffic disruptions.

☐ 3. Attempts will be made to deliver written notices to Makawao Union Church/Anuenue Preschool and to adjacent residential premises two days prior to the burn.

☐ 4. No burning will be done during scheduled church services or on Sunday.

☐ 5. Signs and/or guards will be posted on Baldwin Avenue.

☐ 6. Phone calls will be attempted to the Paia phone notification list.

☐ 7. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Field 200 [redacted] (adjacent to Baldwin Avenue)

Reason for listing as problem fields: Close proximity to Baldwin Avenue (These fields are also located near Paia School)

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 20 miles per hour
- Kona winds (southeast to southwest) less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 107, 200, 205, and/or 213.
(Record wind data below prior to the start of each burn.)

❑ 2. During the summer months of June and July burning will be conducted between 0400 and 1800, excluding the peak traffic hours of 0700-0830 and 1530-1700, to minimize traffic disruptions.

❑ 3. During all months other than June and July burning will be conducted between 0400 and 0600 before classes begin to avoid smoke impacts on the school.

❑ 4. Attempts will be made to deliver written notices to adjacent residential premises (Fields **200, 204**), to Paia School (Fields **200, 204**), and to Holy Rosary Church/Aloha Kai Academy (Field **200**).

❑ 5. Phone calls will be attempted to the Paia phone notification list.

❑ 6. Signs and/or guards will be posted on Baldwin Avenue.

❑ 7. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Field 207 [redacted] (adjacent to Baldwin Avenue)

Reason for listing as problem fields: Close proximity to Baldwin Avenue (These fields are also located near the Skill Village subdivision.)

Special burn procedures to minimize smoke impacts:

☐ 1. Field **207** will be burned only under the following wind conditions:

- Trade winds (north to east) less than 20 miles per hour
- Kona winds (southeast to southwest) less than 15 miles per hour

For field **208**, harvesting of approximately 25 acres of the field may impact Skill Village homes; therefore, burning of this portion of the field will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 20 miles per hour

The remainder of the field may be burned under any conditions except south or southeast winds. Weather data to determine optimum wind conditions for burning these fields will be from the Paia Division weather stations nearest to, or most representative of, the field being burned. **(Record wind data below prior to the start of each burn.)**

☐ 2. Attempts will be made to deliver written notices to Skill Village residential premises (Fields **207**, **208**), to Doris Todd School (Field **207**) and to Holy Rosary Church (Field **208**) two days prior to the burn.

☐ 3. Phone calls will be attempted to the Paia phone notification list.

☐ 4. Signs and/or guards will be posted on Baldwin Avenue.

☐ 5. Burning of field **207** will be conducted between 0600 and 1800. Burning of field **208** will be conducted between 0400 and 1800, excluding the peak traffic hours of 0700-0830 and 1530-1700, to minimize traffic disruptions.

☐ 6. Due to proximity to Doris Todd School, Paia School, and Aloha Kai Academy, field **207** will be harvested only during the summer months of June through September.

☐ 7. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Fields [redacted] 301, 303, 304, [redacted] 308, [redacted] 501, 502, 507, 508, 509, [redacted] 603 (adjacent to Haleakala Highway)

Reason for listing as problem fields: Close proximity to Haleakala Highway

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 25 miles per hour between 0400 and 0600.
- Mauka drainage winds (east/southeast to south/southeast) less than 15 miles per hour between 0400 and 0600.
- Trade winds (north to east) and mauka winds (east/southeast to south/southeast) less than 25 miles per hour after 0830.

Weather data to determine optimum wind conditions will be from the closest weather station(s) located in fields 300, 301, 313, 502, and/or 602.
(Record wind data below prior to the start of each burn.)

☐ 2. Burning will be conducted between 0400 and 0600 (to take advantage of light drainage winds at this time of day), or between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530 to 1700), to minimize traffic disruptions.

☐ 3. Phone calls will be attempted to Kamehameha School (Fields **300, 301**) and to the Pukalani phone notification list (Field **301**).

☐ 4. Signs and/or guards will be posted on Haleakala Highway (**All Fields**). Signs and/or guards will also be posted on Haliimaile Road (Field **300**).

☐ 5. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Fields for Field 401, [redacted] 405, 407, [redacted] 606, [redacted] 800 (adjacent to Pulehu Road)

Reason for listing as problem fields: Close proximity to Pulehu Road and/or Hansen Road

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 20 miles per hour between 0400 and 0600.
- Mauka drainage winds (east/southeast to south/southeast) less than 15 miles per hour between 0400 and 0600.
- Trade winds (north to east) and mauka winds (east/southeast to south/southeast) less than 25 miles per hour after 0830.

Weather data to determine optimum wind conditions will be from the closest weather station(s) located in field 401, 606, 800, and/or 807.
(Record wind data below prior to the start of each burn.)

☐ 2. Field **413** will be burned between 0400 and 0600 (to take advantage of light drainage winds at this time of day). For all other fields, burning will be conducted between 0400 and 0600, or between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530 to 1700), to minimize traffic disruptions.

☐ 3. Signs and/or guards will be posted on Pulehu Road (**All Fields**) and on Omaopio Road (Fields **401**, **405**).

☐ 4. Phone calls will be attempted to Kamehameha School (Fields **401**, **413**). Phone call will be made to the Kahului Airport control tower (Field **606**).

☐ 5. Attempts will be made to deliver written notice to Puunene School (Field **706**).

☐ 6. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Fields 601, 604, 605, 607, 608, [redacted] 610, 709, 710, 711, 712, 714[redacted] (adjacent to Kahului Airport)

Reason for listing as problem fields: Potential to impact Kahului Airport, close proximity to Hana Highway, Kuihelani Highway/Dairy Road, Puunene Avenue, Hansen Road, Pulehu Road, and/or Haleakala Highway

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Any winds less than 15 miles per hour with the exception of southerly winds blowing toward residences in Spreckelsville; Field 714 shall not be burned when winds are blowing towards the Kuihelani subdivision or the First Assembly of God Church
- Winds above 15 miles per hour are acceptable only if blowing from west/northwest to north/northeast

Weather data to determine optimum wind conditions will be from the weather station located in field 602, 604, 606, 611, 707 and/or at the airport (near field 709).
(Record wind data below prior to the start of each burn.)

☐ 2. Burning will be conducted between 0300 and 0600 in order to prevent hazards to air traffic.

☐ 3. The airport control tower will be notified via telephone the day before the burn (**All Fields**).

☐ 4. Signs and/or guards will be posted on Hana Highway (fields **604**, **605**, **607**, **608**, **609**, **610**, and **709**), Pulehu Road (Field **710**), Hansen Road (Fields **711** and **712**), Haleakala Highway (Fields **604**, **605**, **610**), and Kuihelani Highway/Dairy Road (Fields **714**, **715**).

☐ 5. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Fields 707, 708, 716, 717, [redacted] 900, 901, 902, 908, 911, [redacted] 916, 917 (adjacent to Mokulele Highway)

Reason for listing as problem fields: Close proximity to Mokulele Highway

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 25 miles per hour
- Mauka drainage (east/southeast to south/southeast) winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the closest weather station(s) located in fields 707, 817, 903, 906 (Station 757), 906 (Station 906), 911, and/or 921.

(Record wind data below prior to the start of each burn.)

☐ 2. Burning will be conducted between 0400 and 0600 (to take advantage of light drainage winds at this time of day), or between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

☐ 3. Signs and/or guards will be posted on Mokulele Highway.

☐ 4. Phone calls will be attempted to the Kihei phone notification list (Fields **820**, **900**, **908**, **911**, **912**, **914**, **915**, **916**, **917**). Phone call will be made to the Kahului Airport control tower (Fields **708**, **716**, **717**, **718**).

☐ 5. Attempts will be made to deliver written notices to Puunene School (Field **707**), the Maui Humane Society (Fields **901**, **914**), Maui Hardwoods (Fields **708**, **717**, **900**), residential premises in Hale Piilani and Kihei Villages subdivisions (Field **820**), and Sugar Beach residential premises (Fields **916**, **917**) two days prior to the burn.

☐ 6. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Fields 719, [redacted] 751, 753, [redacted] 767, 919[redacted] (adjacent to Kuihelani Highway)

Reason for listing as problem fields: Close proximity to Kuihelani Highway

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (northwest to east) less than 25 miles per hour
- Southeast to south winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the closest weather station(s) located in fields 749, 903, 906 (Station 757), 906 (Station 906), and/or 921. **(Record wind data below prior to the start of each burn.)**

☐ 2. Burning will be conducted between 0400 and 0600 (and to take advantage of light drainage winds at this time of day), or between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700) to minimize traffic disruptions

☐ 3. Signs and/or guards will be posted on Kuihelani Highway (**All Fields**) and on Honoapiilani Highway (Fields **749**, **751**, **753**, **757**, **765**, and **767**).

☐ 4. Phone calls will be attempted to the Maalaea phone notification list (**All Fields**).

☐ 5. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 2	Burn Procedures for Fields 913 (adjacent to North Kihei Road)

Reason for listing as problem field: Close proximity to North Kihei Road (This field is also close to Kealia Pond National Wildlife Refuge and the Maalaea Power Plant.)

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken under the following wind conditions:

- Trade winds (northwest to east) less than 25miles per hour
- Southeast to south winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations located in field 906 (Station 757 or Station 906)
(Record wind data below prior to the start of each burn.)

☐ 2. Burning will be conducted between 0400 and 1800, excluding the peak traffic hours of 0700-0830 and 1530-1700, to minimize traffic disruptions.

☐ 3. Attempts will be made to deliver written notices to Maalaea condominium residents two days prior to the burn.

☐ 4. Signs and/or guards will be posted on North Kihei Road.

☐ 5. Phone calls will be attempted to the Maalaea phone notification list.

☐ 6. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

Hawaiian Commercial & Sugar Company
2014 Agricultural Burning Permit - Exhibit 3

This exhibit describes specific procedures to be followed for pre-harvest burning of sugarcane in all fields to be harvested during the 2014 season with the exception of those identified in Exhibit 2.

Burn procedures specific to each field are described in the attached Exhibit 3 checklists. The Harvesting Manager shall ensure that all fields not listed in Exhibit 2 are burned in accordance with these procedures in addition to those described in Exhibit 1. Exhibit 3 checklists specify wind conditions under which each field may be burned. Along with wind speed and direction in the field at the time of the burn, various other factors can affect the potential for ground level smoke to impact public areas during and after the burn, including plume rise (determined in part by field moisture and the presence of temperature inversions), dispersion conditions, transport winds outside of the field being burned, the location/elevation of the field, and smoldering after completion of the burn. These other factors are addressed in Exhibit 1. Together, the Exhibit 1 and Exhibit 3 procedures are intended to minimize ground level visible smoke entering areas to which the public has unrestricted access.

A. **Identification of fields** - Exhibit 3 procedures are being submitted for all fields or groups of fields which are scheduled to be harvested during the 2014 harvesting season or are included on the list of "unscheduled fields" with the exception of those listed in Exhibit 2. The location of each field is shown on the field map submitted with the 2014 burn permit application.

B. **Suspension of burns due to changes in wind conditions** - Burning shall be undertaken only under the meteorological conditions specified in this exhibit. Monitoring and record keeping procedures during the burn shall be as described in Section B(1) of Exhibit 1 except that average wind speed and direction shall be measured and recorded on the Exhibit 3 checklist prior to the start of each fire within a field. The Harvesting Supervisor in charge of the burn shall monitor wind conditions during each burn. In the event that the wind speed or direction changes during the burn, the Harvesting Supervisor shall re-evaluate wind conditions to determine whether the conditions specified in this exhibit are still being met. If the specified conditions are no longer met, the Harvesting Supervisor shall ensure that no further burns are conducted in that field until the required conditions are again met.

C. **Use of weather station data for burn decisions** - HC&S operates both fixed and mobile weather stations for collecting weather data to be used in making burn determinations. The weather stations to be used for making burn decisions in a field are specified in the Exhibit 3 checklist for that field. In the event that any weather station specified for use in making burn determinations in Exhibit 3 is out of service, either the mobile station or the nearest alternate station will be used instead.

When determining whether wind speeds are within the limits specified in the Exhibit 3 checklist, the Harvesting Supervisor in charge of the burn shall consider the average wind speed being recorded by the appropriate weather station(s). If, at the time that a burn determination is being made, winds are occasionally gusting at speeds in excess of the maximum speed specified for burning in the exhibit, the Harvesting Supervisor shall monitor wind speeds prior to burning sufficiently to confirm that average wind speeds are not increasing above the maximum speed specified in the exhibit.

Allowable wind directions for burning are stated *from* a given direction. That is, when a northerly wind direction is specified, allowable winds are blowing from the north *toward* the south. In addition, allowable winds are specified in the exhibit as a range of directions starting from the first direction listed and moving *clockwise* through the second direction listed. Thus, if the exhibit specifies winds must be "north/northeast to southeast", then the allowable wind directions would be from a heading of north/northeast (22.5 degrees on a compass) through east (90 degrees) to southeast (135 degrees).

EXHIBIT 3	Burn Procedures for Field 100, 101, 102

Areas of Primary Concern: Haiku, Maliko Gulch, Kuau, Upper Paia

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:
- North to east and east to south winds less than 25 miles per hour
- South/southwest to west winds less than 15 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in field 102, 109, 110 and/or 116
(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Paia phone notification list

❑ 3. Attempts will be made to deliver written notices to Old Maui High School (field **100**) two days prior to the burn.

❑ 4. Signs and/or guards will be posted on Holomua Road (field **100**).

❑ 5. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 103, 106

Areas of Primary Concern: Skill Village, Kuau, Lower Paia

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 20 miles per hour
- Kona winds (southeast to southwest) less than 15 miles per hour

Weather data to determine optimum wind conditions for burning these fields will be from the Paia Division weather stations nearest or most representative of the field being burned.

(Record wind data below prior to the start of each burn.)

☐ 2. Phone calls will be attempted to the Paia phone notification list.

☐ 3. Signs and/or guards will be posted on Baldwin Avenue.

☐ 4. Due to proximity to Doris Todd School, Paia School, and Aloha Kai Academy (Holy Rosary Church), fields **103, 106** will be harvested only during the summer months of June through September.

☐ 5. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 110

Areas of Primary Concern: Haiku, Maliko Gulch, Kuau, Paia

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 25 miles per hour
- Kona winds (east/southeast to west) less than 15 miles per hour

Weather data to determine optimum wind conditions for burning these fields will be from the weather stations in fields 102, 107, 109, 110 and/or 116

(Record wind data below prior to the start of each burn.)

☐ 2. Phone calls will be attempted to the Paia phone notification list.

☐ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 112

Areas of Primary Concern: Haiku, Paia

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- North to southeast winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 102, 107, 109, 110 and/or 116

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Paia phone notification list

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 115

Areas of Primary Concern: Skill Village, Kuau, Lower Paia

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (northwest to northeast) less than 20 miles per hour
- Kona winds (south to west) less than 15 miles per hour

Weather data to determine optimum wind conditions for burning these fields will be from the Paia Division weather stations nearest or most representative of the field being burned.

(Record wind data below prior to the start of each burn.)

☐ 2. Phone calls will be attempted to the Paia/Kuau phone notification list.

☐ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 119

Areas of Primary Concern: Maliko Gulch, Haiku, Maunaolu, Makawao

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Northeast to south winds less than 20 miles per hour
- Kona winds (south/southeast to west) less than 15 miles per hour

Weather data to determine optimum wind conditions for burning these fields will be from the Paia Division weather stations nearest or most representative of the field being burned.

(Record wind data below prior to the start of each burn.)

☐ 2. Phone calls will be attempted to the Paia phone notification list and to the Makawao Montessori School.

☐ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 120

Areas of Primary Concern: Haiku, Paia, Maliko Gulch

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- North to southeast winds less than 25 miles per hour
- South/southeast to east winds less than 15 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 102, 107, 109, 110 and/or 116

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Paia phone notification list

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 201, [redacted] 203, 205, 206

Areas of Primary Concern: Maunaolu, Haliimaile, Paia, Skill Village

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- North to southeast winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 200, 201, and/or 205

(Record wind data below prior to the start of each burn.)

❑ 2. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 213[redacted]

Areas of Primary Concern: Baldwin Beach, Paia, Skill Village, Spreckelsville

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Field **213** north to southeast winds less than 25 miles per hour
- Field **214** north to east winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 107, 205, 213, and/or 611

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Paia phone notification list (field **214**)

❑ 3. Attempts will be made to deliver written notices to Lower Paia residential premises (field **214**) two days prior to the burn.

❑ 4. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 305, [redacted] 310, 311, 313

Areas of Primary Concern: Pukalani, Kamehameha School, Omaopio/Kula Meadows

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Any winds less than 25 miles per hour **except** southwest to northwest winds

Weather data to determine optimum wind conditions will be from the weather stations in fields 301, 311, 313, 502, and/or 504

(Record wind data below prior to the start of each burn.)

❑ 2. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 312, 314

Areas of Primary Concern: Pukalani, Haliimaile, Maunaolu

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Northeast to southeast winds less than 30 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 200, 201, 205, and/or 300

(Record wind data below prior to the start of each burn.)

❑ 2. Phone call will be made to Kamehameha School (Fields **312** and **314**).

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 400[redacted]

Areas of Primary Concern: Close proximity to Upcountry communities of Pukalani, Omaopio, Kula Meadows; unpredictable/variable winds after 0800

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Winds north/northeast to south/southeast less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations located in fields 401 and/or other Keahua Division weather stations nearest to or most representative of conditions in the field.

(Record wind data below prior to the start of each burn.)

☐ 2. During the hours between 0200 and 0800, winds in this area typically blow south/southeast to east/southeast (away from populated areas), whereas after 0800 they tend to blow toward populated areas.

Due to unpredictable winds after 0800, burning will be conducted between 0400 and 0700 and completed as quickly as possible to minimize hazardous conditions. If conditions are favorable (blowing away from populated areas), however, field **400** may also be burned between 0830 and 1800, excluding the peak traffic hours of 1530-1700 to minimize traffic disruptions on nearby Omaopio Road.

☐ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 408[redacted]

Areas of Primary Concern: Pukalani, Omaopio/Kula Meadows, Lower Kula, Pulehu Road

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- North/northwest to southeast winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 401, 414, 800, 805, and/or KAP

(Record wind data below prior to the start of each burn.)

❑ 2. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields [redacted] 412, [redacted] 415, 417

Areas of Primary Concern: Kihei, Upcountry Communities

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Northwest to east or east to south/southwest winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 414, 415, 805, 817, and/or KAP

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Kihei phone notification list.

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 503, 504

Areas of Primary Concern: Pukalani, Kamehameha School, Omaopio/Kula Meadows, Ameron/Landfill

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- Winds north to southeast less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations located in fields 311, 502, and/or 504.

(Record wind data below prior to the start of each burn.)

☐ 2. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 510[redacted]

Areas of Primary Concern: Haleakala Highway, Pukalani/Omaopio, Ameron Quarry and Central Maui Landfill

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- North/northwest to east/southeast winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 502, 504, 602, and/or 604

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Ameron Quarry and to the County Landfill (Fields **510** and **512**).

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 703 and 704

Areas of Primary Concern: Kihei, Kahului

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north to east) less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 707, 807, and/or 911

(Record wind data below prior to the start of each burn.)

❑ 2. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 801, 802, [redacted] 805, 806, 807, [redacted] 809, 810

Areas of Primary Concern: Kihei, Pulehu Gulch

Special burn procedures to minimize smoke impacts:

☐ 1. Burning will be undertaken only under the following wind conditions:

- North to southeast winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 401, 800, 805, 807, and/or 818

(Record wind data below prior to the start of each burn.)

☐ 2. Phone calls will be attempted to the Kihei telephone notification list (Field **810**).

☐ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 811, 812, 814, 816

Areas of Primary Concern: Kihei, Pulehu Gulch

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Northwest to east winds less than 20 miles per hour
- East/southeast to southwest winds less than 15 mph

Weather data to determine optimum wind conditions will be from the weather stations in fields 805, 807, 817, 818 and/or 911

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Kihei telephone notification list (Fields **811**, **812**, and **816**)

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 817

Areas of Primary Concern: Kihei, Sugar Beach

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- East/northeast to southeast winds less than 15 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 415, 805, 817, and/or KIH

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Kihei phone notification list.

❑ 3. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields [redacted] 818 [redacted]

Areas of Primary Concern: Adjacent National Guard Armory and Hawaiian Cement plant, Kihei

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (northeast to east) less than 20 miles per hour
- Kona winds (southeast to southwest) less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 818 or field 911.

(Record wind data below prior to the start of each burn.)

❑ 2. Burning will be conducted between 0400 and 1800 (Fields **815** and **819**). Early burns are preferred in these fields to lessen potential for impact on businesses in area. Burning in Field **818** will be conducted between 0600 and 1800.

❑ 3. Phone calls will be attempted to the Kihei phone notification list (Field **819**).

❑ 4. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 822, 823

Areas of Primary Concern: Kihei, Sugar Beach

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- East/southeast to southwest and southwest to northwest winds less than 15 miles per hour (avoid burning during trade wind conditions)

Weather data to determine optimum wind conditions will be from the weather stations in fields 805, 817, 415, and/or KIH

(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Kihei phone notification list.

❑ 3. Attempts will be made to deliver written notifications to residential premises in the Hale Piilani subdivision two days prior to the burn (Field **823**).

❑ 4. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 903, 904, [redacted] 921, 922

Areas of Primary Concern: Maalaea, Kihei, Kuihelani Highway

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- North/northwest to northeast winds less than 25 miles per hour
- Southwest to northwest winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 749, 903, 906 (Station 757), 906 (Station 906), and/or 921
(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Maalaea phone notification list (fields **905**, **921**, **922**).

❑ 3. Signs and/or guards will be posted on Kuihelani Highway (fields **921, 922**).

❑ 4. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Field 907

Areas of Primary Concern: Maalaea, North Kihei Road, Honoapiilani Highway

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- For the entire field, southwest to west winds less than 15 miles per hour
- For the top portion of the field (between Honoapiilani Highway and Upper Maalaea Road), northwest to north/northwest winds less than 25 miles per hour
- For the makai portion of the field (below the hauler road), northwest to north winds less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather stations in fields 749, 906 (Station 757), and/or 906 (Station 906)
(Record wind data below prior to the start of each burn.)

❑ 2. Phone calls will be attempted to the Maalaea phone notification list.

❑ 3. Attempts will be made to deliver written notifications to Maalaea condominium residences two days prior to the burn.

❑ 4. Signs and/or guards will be posted on North Kihei Road

❑ 5. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

EXHIBIT 3	Burn Procedures for Fields 909, 910

Areas of Primary Concern: Kihei, Maalaea

Special burn procedures to minimize smoke impacts:

❑ 1. Burning will be undertaken only under the following wind conditions:

- Trade winds (north/northwest to northeast) less than 20 miles per hour
- Kona winds (southeast to southwest) less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 807, 818, 906 (Station 757) and/or 906 (Station 906).
(Record wind data below prior to the start of each burn.)

❑ 2. Burning will be conducted between 0400 and 1800.

❑ 3. Phone calls will be attempted to the Kihei phone notification list

❑ 4. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

Place a check in the box after each item is verified completed. Record wind data at the start of each burn in the table below. Attach this form to the completed Pre-Burn Checklist to be filed in the harvesting records.

Wind Data for Burn in Field _____ Date: _____

Time	Wind Speed	Wind Direction	Weather Station	Time	Wind Speed	Wind Direction	Weather Station

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

2014 Exhibit 3 Fields - Summary of Allowable Wind Conditions			
Fields	**Sensitive Areas**	**Allowable Winds**	**Justification for Conditions**
100, 101, 102	Haiku, Maliko Gulch, Kuau, Upper Paia	N to S (through East), <25 mph SSW to W, <15 mph	N to S wind directions should carry smoke away from Haiku and avoid impacts to the gulch. Elevation of field, coupled with plume rise, should carry smoke aloft over Paia/Kuau area when burning under north to east wind conditions. Burning under SSW to WSW conditions should carry smoke out to sea. Low wind speeds under WSW to W winds should provide for adequate plume rise to carry smoke over Haiku.
103, 106	Skill Village, Kuau, Lower Paia	N to E, <20 mph SE to SW, <15 mph	Wind speed limitation when burning under trade wind conditions should allow for adequate plume rise over Skill Village and Paia. Kona winds should carry smoke largely clear of public areas, and low wind speeds coupled with elevation of the fields should keep smoke well aloft.
110	Haiku, Maliko Gulch, Kuau, Paia	N to E, <25 mph ESE to W, <15 mph	Wind directions should carry smoke away from Haiku and avoid impacts to the gulch. Distance from Paia will allow time for plume to rise over downwind populated areas when burning under trade wind conditions. Kona winds should carry smoke largely clear of
112	Haiku, Maliko Gulch, Paia	N to SE, <25 mph	Wind directions should carry smoke away from Haiku and avoid impacts to the gulch. Elevation of field, coupled with plume rise, should carry smoke aloft over Paia/Kuau area when burning under east to southeast wind conditions. (This Exhibit 3 previously approved for 2013 season.)
115	Skill Village, Kuau, Lower Paia	NW to NE, <20 mph S to W, <15 mph	Burning under trade wind conditions should keep smoke largely upslope of Paia town, and wind speed restriction will allow for good plume rise over Skill Village. Kona winds should carry smoke clear of public areas and out to sea.

2014 Exhibit 3 Fields - Summary of Allowable Wind Conditions			
Fields	**Sensitive Areas**	**Allowable Winds**	**Justification for Conditions**
119	Maunaolu, Haiku, Maliko Gulch, Makawao	NE to S, <20 mph SSE to W, < 15 mph	Wind directions should carry smoke away from Haiku and Makawao. Elevation of field, coupled with plume rise, should carry smoke aloft over Paia/Kuau when burning under southeasterly wind conditions. Lower limit on wind speed should allow for good plume rise to minimize impacts to downwind Maunaolu area. Kona wind conditions should carry smoke largely above Haiku town, while low wind speeds should allow for good plume rise.
120	Haiku, Paia, Maliko Gulch	N to SE, <25 mph SSE to E, < 15 mph	Wind directions should carry smoke away from Haiku, Maliko Gulch, and Makawao. Elevation of field, coupled with plume rise, should carry smoke aloft over Paia/Kuau when burning under southeasterly wind conditions. Kona wind conditions should carry smoke largely away from public areas, while low wind speeds should allow for good plume rise.
201, 203, 205, 206	Maunaolu, Haliimaile, Paia, Skill Village	N to SE, <25 mph	Wind directions should carry smoke away from Maunaolu, Haliimaile, Paia, and Skill Village. Elevation of field, coupled with plume rise, should carry smoke aloft over Maui Country Club and Spreckelsville when burning under southeasterly wind conditions. (This Exhibit 3 previously approved for 2013 season.)
213	Baldwin Beach, Spreckelsville, Skill Village, Paia	N to SE, <25 mph	Wind directions should carry smoke away from Paia and Skill Village and aloft over Spreckelsville for both fields . For field 213, the higher elevation of the field, coupled with good plume rise, should also prevent impacts to Baldwin Beach when burning under southeasterly wind conditions. (This Exhibit 3 previously approved for 2013 season.)
305, 310, 311, 313	Pukalani, Kamehameha School, Omaopio, Kula Meadows	NW to SW (through E), <25 mph	Wind directions should carry smoke away from public areas. (This Exhibit 3 previously approved for 2013 season.)
312, 314	Pukalani, Haliimaile, Maunaolu	NE to SE, <30 mph	Wind directions should carry smoke away from public areas. (This Exhibit 3 previously approved for 2013 season.)

2014 Exhibit 3 Fields - Summary of Allowable Wind Conditions			
Fields	**Sensitive Areas**	**Allowable Winds**	**Justification for Conditions**
400	Pukalani, Omaopio, Kula Meadows	NNE to SSE, <20 mph	Wind directions should carry smoke away from nearby communities. Early burn permitted to avoid unpredictable winds. Good plume rise should prevent impacts to nearby roads. (This Exhibit 3 previously approved for 2013 season.)
408	Pukalani, Omaopio/Kula Meadows, Lower Kula, Pulehu Road	NNW to SE, <25 mph	Wind directions should carry smoke away from public areas and also prevent impacts to Pulehu Road. (This Exhibit 3 previously approved for 2013 season.)
412, 415, 417	Kihei, Upcounty Communities	NW to SSW (through E), <20 mph	Wind directions should carry smoke away from public areas. Elevation of fields and plume rise should ensure smoke passes aloft over Kihei. (This Exhibit 3 previously approved for 2013 season.)
503, 504	Pukalani, Kamehameha School, Omaopio/Kula Meadows, Ameron/Landfill	N to SE, <25 mph	Wind directions should prevent impacts to the highway and to Upcountry communities. Elevation of the fields, coupled with good plume rise, should allow smoke to pass aloft over Kahului and/or "funnel effect" through central valley should carry smoke aloft over Kealia Pond under northerly wind conditions.
510	Haleakala Highway, Pukalani/Omaopio, Ameron Quarry and Central Maui Landfill	NNW to ESE, <25 mph	Wind directions should prevent impacts to the highway and to Upcountry communities. Elevation of the fields, coupled with good plume rise, should allow smoke to pass aloft over Kahului and/or "funnel effect" through central valley should carry smoke aloft over Kealia Pond under northerly wind conditions. (This Exhibit 3 previously approved for 2013 season.)
703, 704	Kihei, Kahului, Wailuku	N to E, <20 mph	"Funnel effect" through central valley should divert smoke around Maalaea. Wind speed restrictions should also minimize potential for impacts to Kihei and to Kahului and Wailuku by allowing for good plume rise.

2014 Exhibit 3 Fields - Summary of Allowable Wind Conditions			
Fields	**Sensitive Areas**	**Allowable Winds**	**Justification for Conditions**
801, 802, 805, 806, 807, 809, 810	Kihei, Pulehu Gulch	N to SE, <25 mph	Wind directions combined with "funnel effect" through central valley should keep ground level smoke out of Kihei, with smoke funneling towards Kealia Pond under northerly wind conditions in the field. Elevation of fields, coupled with good plume rise, should also allow any smoke near North Kihei to pass aloft. (This Exhibit 3 previously approved for 2013 season.)
811, 812, 814, 816	Kihei, Pulehu Gulch	NW to E, <20 mph ESE to SW, <15 mph	Wind speed restrictions should minimize potential to impact Kihei or Wailuku by promoting good plume rise. "Funnel effect" through central valley will divert smoke around Maalaea.
817	Kihei, Sugar Beach	ENE to SE, <15 mph	Wind directions should direct smoke away from Kihei and Sugar Beach area. Low wind speeds should allow for good plume rise and dispersion.
818	Armory, Hawaiian Cement, Kihei	NE to E, <20 mph SE to SW, <20 mph	Early burn permitted to lessen potential to impact nearby businesses. Wind restrictions should minimize potential to impact Kihei, Wailuku. "Funnel effect" through central valley will divert smoke around Maalaea.
822, 823	Kihei, Sugar Beach	ESE to SW and SW to NW, <15	Wind directions should direct smoke away from Kihei and Sugar Beach area. Low wind speeds should allow for good plume rise and dispersion over the plantation. (This Exhibit 3 previously approved for 2013 season.)
903, 904, 921, 922	Maalaea, Kihei, Kuihelani Highway	NNW to NE, <25 mph SW to NW, <20 mph	Wind directions should allow smoke to avoid Maalaea and Kihei when winds are blowing toward Maalaea Bay and to minimize impacts to Kahului and Wailuku, as well as Kuihelani Highway, under westerly wind conditions. (This Exhibit 3 previously approved for 2013 season.)

2014 Exhibit 3 Fields - Summary of Allowable Wind Conditions			
Fields	**Sensitive Areas**	**Allowable Winds**	**Justification for Conditions**
907	Maalaea, North Kihei Road, Honoapiilani Highway	SW to W, <15 mph NW to NNW, <25 mph (above hauler road) NW to N, <25 mph (below hauler road)	Burning under Kona wind conditions at low wind speeds should provide for good plume rise over North Kihei Road with smoke blowing away from Maalaea and Kihei. North to northwesterly wind directions should allow smoke to avoid the Maalaea condominiums, North Kihei Road, and Honoapiilani Highway as it blows out into Maalaea Bay. (This Exhibit 3 previously approved for 2013 season.)
909, 910	Kihei, Maalaea	NNW to NE <20 mph SE to SW <20 mph	Early burn permitted to take advantage of lighter drainage winds. "Funnel effect" through central valley should divert smoke around Maalaea. Wind restrictions should also minimize potential for impacts to Kihei and to Wailuku. (This Exhibit 3 previously approved for 2013 season.)

Harvest Schedule 2014

Actuals as of 1/1/2014 — Printed on 12/11/2013

Seq #	Field		Var	Sched	Hvst Start		Age	Total acre	Balance acre	*** Estimates TCA	TSA	TCTS	Hvstd Acres	****** Actuals TCA	TSA	TCTS	TSA	***** Polado ***** Date	Wks	Rate
1	D405	2	3567	P	3/11/14		28.9	210.5	210.5	80	11.4	7.0						2/09/14	4.3	
2	D907	1	4153	P	3/15/14		28.4	184.2	184.2	98	13.6	7.2						2/01/14	6.0	
3	D716	1	7052	P	3/19/14		28.0	143.6	143.6	98	12.3	8.0						2/05/14	6.0	
4	D807	1	7052	P	3/23/14	E	23.5	154.7	154.7	84	11.4	7.4						2/09/14	6.0	
5	D822	1	7052	P	3/26/14		25.0	167.9	167.9	90	12.6	7.2						2/12/14	6.0	
6	D823	1	4319	P	3/29/14		25.0	133.9	133.9	89	12.4	7.2						2/15/14	6.0	
7	D913	1	4153	P	4/1/14	E	22.9	371.3	371.3	90	13.3	6.8						2/18/14	6.0	
8	D753	1	7052	P	4/9/14		23.8	125.9	125.9	100	14.4	7.0						2/26/14	6.0	
9	D767	1	7052	P	4/11/14		23.7	122.4	122.4	95	14.1	6.8						2/28/14	6.0	
10	D412	1	7052	P	4/13/14		23.6	244.1	244.1	72	10.7	6.7						3/02/14	6.0	
11	D401	1	4153	P	4/16/14		23.4	528.3	528.3	75	11.2	6.7						3/05/14	6.0	
12	D305	1	3792	P	4/24/14		23.5	95.6	95.6	70	10.3	6.8						3/13/14	6.0	
13	D310	1	4319	P	4/25/14		23.3	338.3	338.3	73	10.8	6.7						3/14/14	6.0	
14	D806	1	7052	P	4/30/14		23.3	87.8	87.8	89	13.1	6.8						3/19/14	6.0	
15	D608	1	7052	P	5/1/14		23.3	301.2	301.2	90	12.8	7.0						3/20/14	6.0	
16	D601	1	7052	P	5/8/14		23.3	183.2	183.2	92	13.6	6.8						3/27/14	6.0	
17	D603	1	7052	P	5/11/14		23.3	162.5	162.5	95	14.1	6.7						3/30/14	6.0	
18	D303	1	7052	P	5/13/14		23.4	170.2	170.2	80	11.8	6.8						4/01/14	6.0	
19	D119	1	7052	P	5/16/14		24.9	159.8	159.8	110	16.5	6.7						4/04/14	6.0	
20	H120	1	3567	P	5/20/14		24.2	120.0	120.0	105	15.8	6.7						4/08/14	6.0	
21	D900	1	7052	P	5/23/14		23.5	148.7	148.7	90	12.7	7.1						4/11/14	6.0	
22	D805	1	7052	P	5/25/14		23.4	129.4	129.4	85	12.6	6.8						4/13/14	6.0	
23	D809	1	3567	P	5/27/14	E	23.2	263.0	263.0	102	15.2	6.7						4/15/14	6.0	
24	D607	1	7052	P	5/31/14		24.4	188.9	188.9	95	14.0	6.8						4/19/14	6.0	
25	D104	1	3567	P	6/5/14		23.3	209.4	209.4	85	11.6	7.4						4/24/14	6.0	
26	H314	1	3567	P	6/8/14		23.3	183.7	183.7	85	12.6	6.8						4/27/14	6.0	
27	D600	1	7052	P	6/10/14		23.4	329.7	329.7	100	14.7	6.8						4/29/14	6.0	
28	D501	1	3567	P	6/16/14		22.1	157.4	157.4	70	10.5	6.7						5/05/14	6.0	
29	D501	2	7052	P	6/19/14		22.2	64.9	64.9	85	12.7	6.7						5/08/14	6.0	
30	D916	1	7052	P	6/20/14		23.4	297.4	297.4	85	12.1	7.0						5/09/14	6.0	
31	D703	1	7052	P	6/24/14		23.4	194.3	194.3	87	12.9	6.7						5/13/14	6.0	
32	D610	1	3567	P	6/27/14	E	23.3	129.2	129.2	85	11.0	7.7						5/16/14	6.0	
33	D908	1	4319	P	6/28/14		23.3	81.2	81.2	92	13.4	6.9						5/17/14	6.0	
34	D205	1	3567	P	6/30/14		23.3	248.9	248.9	85	12.2	7.0						5/19/14	6.0	
35	D207	1	3567	P	7/3/14		23.2	216.4	216.4	82	11.5	7.1						5/22/14	6.0	
36	D504	1	7052	P	7/7/14	E	23.0	321.7	321.7	75	11.1	6.8						5/26/14	6.0	
37	D312	1	3567	P	7/11/14		22.8	194.6	194.6	80	11.9	6.8						5/30/14	6.0	
38	D115	1	7052	P	7/14/14		22.7	156.4	156.4	87	11.8	7.4						6/02/14	6.0	
39	R107	1	7052	P	7/17/14		22.8	69.7	69.7	86	11.7	7.4						6/05/14	6.0	
40	D508	1	7052	P	7/19/14		22.8	73.3	73.3	83	12.3	6.8						6/07/14	6.0	
41	D704	1	7052	P	7/20/14		24.2	195.0	195.0	84	11.7	7.2						6/08/14	6.0	
42	D818	1	7052	P	7/22/14		22.9	121.5	121.5	80	11.8	6.8						6/10/14	6.0	
43	D604	1	7052	P	7/24/14		22.8	328.0	328.0	92	13.7	6.7						6/12/14	6.0	
44	D812	1	7052	P	7/29/14		22.8	197.5	197.5	85	12.6	6.8						6/17/14	6.0	
45	D606	1	3567	P	8/2/14		22.9	130.9	130.9	86	11.5	7.5						6/21/14	6.0	
46	D213	1	3567	P	8/4/14		22.8	88.7	88.7	87	12.3	7.1						6/23/14	6.0	
47	D501	3	3567	P	8/5/14		22.8	166.0	166.0	90	13.5	6.7						6/24/14	6.0	
48	D605	1	4153	P	8/8/14	E	22.8	78.1	78.1	87	12.0	7.3						6/27/14	6.0	
49	D814	1	7052	P	8/9/14	E	22.5	352.4	352.4	85	12.6	6.7						6/28/14	6.0	
50	D816	1	4153	P	8/14/14		23.0	217.4	217.4	80	11.8	6.8						7/03/14	6.0	
51	D507	1	4153	P	8/18/14		23.0	127.7	127.7	90	13.1	6.9						7/07/14	6.0	
52	D507	2	4153	P	8/20/14		23.0	133.8	133.8	90	13.1	6.9						7/09/14	6.0	

Harvest Schedule 2014

Actuals as of 1/1/2014 — Printed on 12/11/2013

Seq #	Field		Var	Sched	Hvst Start		Age	Total acre	Balance acre	*** Estimates TCA	TSA	TCTS	Hvstd Acres	****** Actuals TCA	TSA	TCTS	TSA	***** Polado ***** Date	Wks	Rate
53	D605	2	4153	P	8/22/14		23.2	114.9	114.9	87	12.0	7.3						7/11/14	6.0	
54	D610	2	4153	P	8/24/14		23.2	46.4	46.4	85	11.0	7.8						7/13/14	6.0	
55	D311	1	7052	P	8/25/14		22.7	199.3	199.3	70	10.4	6.8						7/14/14	6.0	
56	D604	2	7052	P	8/27/14		22.6	186.4	186.4	92	13.6	6.8						7/16/14	6.0	
57	D717	1	3567	P	8/30/14	E	22.7	154.2	154.2	82	11.3	7.3						7/19/14	6.0	
58	D502	1	7052	P	9/2/14		22.7	211.7	211.7	65	9.5	6.9						7/22/14	6.0	
59	D503	1	7052	P	9/5/14		22.8	155.4	155.4	75	11.1	6.8						7/25/14	6.0	
60	H103	1	7052	P	9/6/14	E	22.8	253.9	253.9	72	10.4	6.9						7/26/14	6.0	
61	D400	1	7052	P	9/11/14		22.7	327.9	327.9	72	10.7	6.7						7/31/14	6.0	
62	D811	1	7052	P	9/16/14		22.7	212.1	212.1	85	12.6	6.7						8/05/14	6.0	
63	D102	1	5794	P	9/19/14		22.6	77.7	77.7	80	11.7	6.9						8/08/14	6.0	
64	H106	1	5794	P	9/20/14		22.6	120.2	120.2	90	12.4	7.3						8/09/14	6.0	
65	D111	1	4319	P	9/22/14		22.4	157.1	157.1	80	11.5	6.9						8/11/14	6.0	
66	D203	1	5794	P	9/24/14		22.5	194.7	194.7	80	11.8	6.8						8/13/14	6.0	
67	H200	1	7052	P	9/27/14		22.1	364.6	364.6	60	8.3	7.2						8/16/14	6.0	
68	D708	1	4319	P	10/3/14	E	22.6	224.9	224.9	87	12.4	7.0						8/22/14	6.0	
69	D800	1	4319	P	10/6/14		22.6	173.0	173.0	80	11.9	6.7						8/25/14	6.0	
70	H108	1	7052	P	10/9/14		21.6	285.3	285.3	90	12.6	7.1						8/28/14	6.0	
71	H206	1	3567	P	10/15/14		22.3	221.0	221.0	80	11.7	6.8						9/03/14	6.0	
72	D100	1	4319	P	10/19/14		20.1	239.9	239.9	85	11.9	7.1						9/07/14	6.0	
73	D901	1	3567	P	10/23/14	E	22.6	172.0	172.0	88	10.9	8.1						9/11/14	6.0	
74	D605	3	7052	P	10/26/14		22.6	159.0	159.0	85	11.7	7.3						9/14/14	6.0	
75	D917	1	7052	p	10/30/14		22.6	204.7	204.7	85	11.0	7.7						9/18/14	6.0	
76	D313	1	7052	P	11/3/14		22.2	171.1	171.1	70	10.4	6.7						9/22/14	6.0	
77	D801	1	7052	P	11/6/14		22.0	149.6	149.6	75	11.1	6.7						9/25/14	6.0	
78	D101	1	4319	P	11/8/14		20.2	167.1	167.1	85	11.7	7.2						9/27/14	6.0	
79	H110	1	7052	P	11/12/14		20.9	98.9	98.9	85	12.4	6.8						10/01/14	6.0	
80	H201	1	3567	P	11/14/14		20.3	254.6	254.6	72	10.7	6.7						10/03/14	6.0	
81	H301	1	7052	P	11/18/14		22.1	350.2	350.2	85	12.7	6.7						10/07/14	6.0	
82	D407	1	3792	P	11/24/14		22.2	142.4	142.4	65	9.6	6.8						10/13/14	6.0	
83	D810	1	7052	P	11/26/14		22.1	141.6	141.6	83	12.3	6.8						10/15/14	6.0	
84	D810	2	4153	P	11/29/14		22.2	186.5	186.5	83	12.3	6.7						10/18/14	6.0	
85	D304	1	3792	P	12/2/14		21.9	264.8	264.8	70	10.4	6.7						10/21/14	6.0	
86	D415	1	4319	P	12/6/14		21.9	244.9	244.9	70	10.4	6.7						10/25/14	6.0	
87	D417	1	7052	P	12/9/14		21.6	182.9	182.9	65	9.6	6.7						10/28/14	6.0	
88	D817	1	7052	P	12/9/14		21.4	297.2	297.2	70	9.4	7.4						10/28/14	6.0	
89	D751	1	7052	P	12/9/14		16.3	127.4	127.4	45	5.1	8.8						10/28/14	6.0	
	0	/	1,405,634	TNC			22.9	17,036	17,036	83	11.9	6.93	0	0	0.0	0.00		0 / 202,749 TTS		

M=Millwater T=Target C=Carryover, B=Billet U=Unscheduled, E=Experimental H=Hel Fld, *= Polado
t= time sensitive R-HEL 5/1-10/1 c-Condo May, Sep, Oct X- change since

I have reviewed this schedule and hereby certify it to be an accurate and complete copy of the HC&S Harvest Schedule for 2014.

Certified by:

Harvesting Manager — Date 12/13/13

Director, Agricultural Research and Crop Control — Date 12/13/13

Hawaiian Commercial & Sugar Company
2014 Agricultural Burning Permit
Unscheduled Fields List

The following fields are not listed on the 2014 HC&S Harvest Schedule because they are seed and/or "millwater" fields (fields irrigated with factory wastewater) and a specific harvest date has not been assigned to them. It is not possible to forecast exactly when seed cane from these fields will be required or when immediate harvesting of a millwater field may become necessary. These fields are included on the Harvest Map and listed with the Exhibit 2 and Exhibit 3 Burn Procedures as appropriate.

Exhibit 3 Fields: **806, 903, 904, 909, 910, 921, 922**

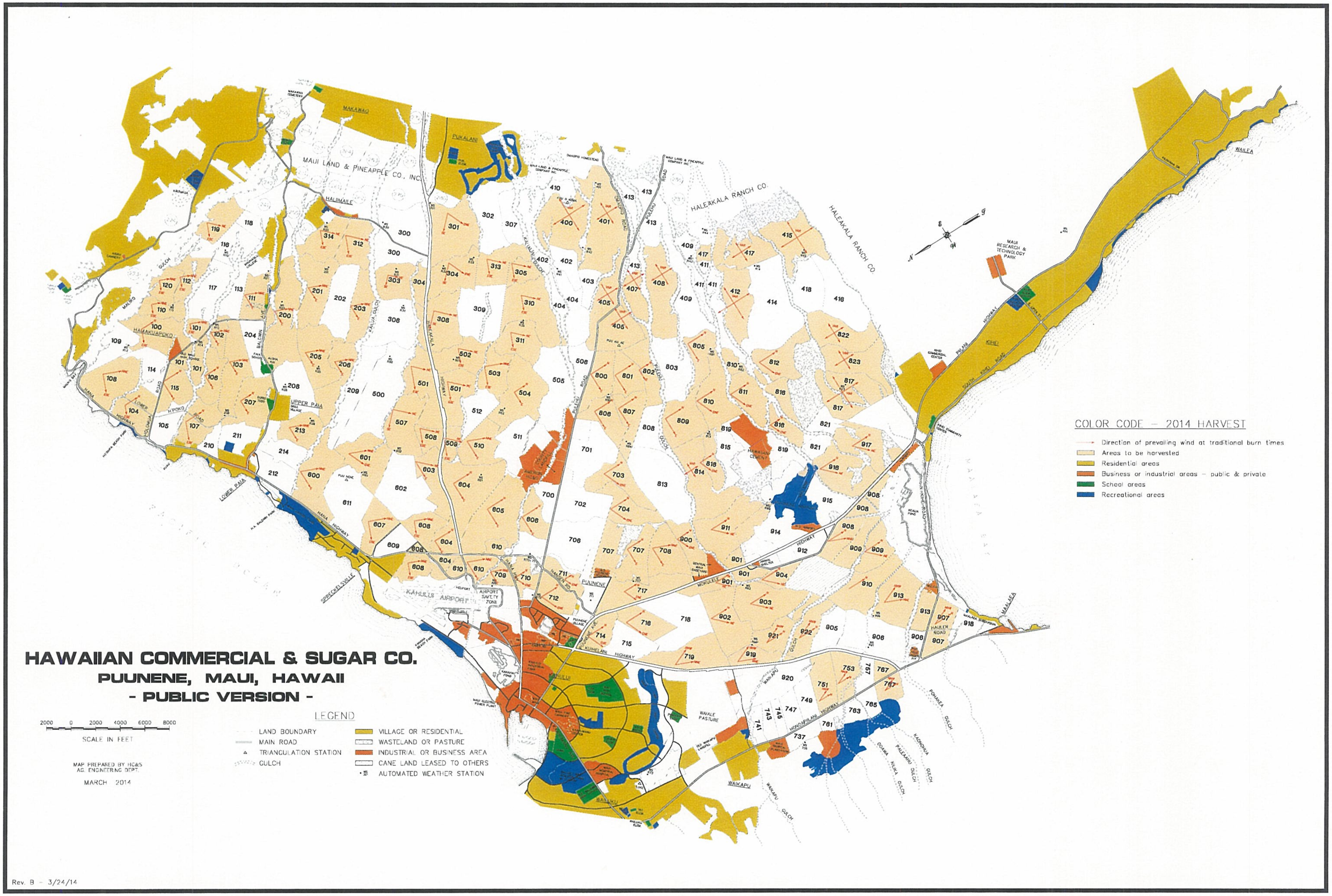
Exhibit 2 Fields**: 709, 710, 711, 712, 714, 719, 751, 902, 908, 911, 919**
(Note: For fields 751, 806 and 908, a portion of each field is planted in seed; the remainder of each field is planted in crop. These fields therefore appear on both the harvest schedule and on the unscheduled fields list.)

Due to operational uncertainties, HC&S may need to harvest in 2014 certain fields that are currently not scheduled for harvest until 2015. These fields are not identified on the 2014 Harvest Schedule but could potentially require harvesting late in 2014 or early in 2015. Harvesting parameters for these fields are listed with the Exhibit 2 and Exhibit 3 Burn Procedures as appropriate.

Exhibit 3 Fields: **112, 408, 510, 802**

Exhibit 2 Fields: **308, 509, 707, 717**
(Note: Field 717 is split into two sections that are scheduled for harvest in alternating years. This field therefore appears on both the harvest schedule and on the unscheduled fields list.)

In order to avoid having to modify the permit later under possibly urgent conditions, HC&S proposes that all of these fields be included in the 2014 permit at this time.


HAWAIIAN COMMERCIAL & SUGAR CO.
PUUNENE, MAUI, HAWAII
- PUBLIC VERSION -
COLOR CODE - 2014 HARVEST
Direction of prevailing wind at traditional burn times
Areas to be harvested
Residential areas
Business or industrial areas - public & private
School areas
Recreational areas
LEGEND
LAND BOUNDARY
MAIN ROAD
TRIANGULATION STATION
GULCH
VILLAGE OR RESIDENTIAL
WASTELAND OR PASTURE
INDUSTRIAL OR BUSINESS AREA
CANE LAND LEASED TO OTHERS
AUTOMATED WEATHER STATION
2000 0 2000 4000 6000 8000
SCALE IN FEET
MAP PREPARED BY HC&S
AG. ENGINEERING DEPT.
MARCH 2014
MAUI LAND & PINEAPPLE CO. INC.
HALEAKALA RANCH CO.
MAKAWAO
PUKALANI
HALIIMAILE
UPPER PAIA
LOWER PAIA
SPRECKELSVILLE
KAHULUI AIRPORT
PUUNENE
KIHEI
WAILEA
MAALAEA
WAIKAPU
Rev. B - 3/24/14